



St. Malachy CATHOLIC SCHOOL

An Independence Mission School

Greetings Middle School Families,

Welcome to the 2023-2024 school year! We are looking forward to supporting and challenging your students in their academic, spiritual, and social-emotional growth. The following document includes important contact information for our Middle School Staff as well as our classroom visions for equity, and the full St. Malachy Middle School Vision.

Our **Middle School Team** this year is composed of Ms. Wallace, Mr. Roccaforte, and Ms. Day:

- **Ms. Kahliyah Walace**
 - Social Studies and Science
 - 6th Grade Homeroom
 - kwalace@stmalachyphila.org

Hello to my fellow Malachy Students and Families! I can not describe in words how excited I am to be your science/social studies teacher. As we approach the incoming school year it is an honor to get to know you, we will engage in exciting topics along with projects. This year is officially my first year as a teacher, which is followed by many more years to come. This year our content will come from Amplify, which is a fun way to keep scholars engaged. As I stated above I am so excited to work with you, I can't wait to meet you.

- **Mr. Roccaforte**
 - Mathematics
 - 7th Grade Homeroom
 - zroccaforte@stmalachyphila.org

Greetings St. Malachy Middle Schoolers. This will be my fourth year teaching at St. Malachy. I am so excited to continue getting to know your scholars as they grow. I look forward to making mathematics a fun wonder for all of us. Our Eureka Math curriculum will guide our explorations across many math topics. In 6th and 7th grade we will start out learning about ratios, and our 8th graders will start learning about exponents. I am thankful and honored to be able to work with you.



St. Malachy

CATHOLIC SCHOOL

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- **Ms. Day**

- Lead Middle School Teacher/English Language Arts
- 8th Grade Homeroom
- mday@stmalachyphila.org

Hello Middle School Families! I am so excited to be entering my seventh year of teaching ELA at St. Malachy and can't wait to embark on the new academic school year with your scholars. This year we will focus on a variety of topics, starting with Greek Mythology (6th Grade), The Refugee Experience (7th Grade), and Folklore of Latin America (8th Grade). I am excited for all this year has in store for us, and look forward to working with all of you.



St. Malachy CATHOLIC SCHOOL

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Summer Work for Students going from Grade 7 to Grade 8

Dear St. Malachy Families,

Thank you again for your incredible partnership, hard work, and support throughout this past school year. Schools and students across the country faced challenges this year, and as always the St. Malachy community rose to the occasion, worked together, and accomplished something great. It wasn't always easy, it wasn't always pretty, but it was effective and impactful for our students and our classroom communities. Our students continued learning and working hard through the very end of the school year. We are so proud of them and grateful for you and our teachers.

We know that, more than ever, it is important this Summer that students be provided with learning opportunities and enriching activities. We know Summer is also a time for families to relax, spend time with friends, read books you love, find a new series, or learn a new skill. We hope you will find the work enclosed engaging, enriching, and interesting, so that your scholar remains intellectually stimulated while also making space for family life.

We recommend you designate a time for your scholar to work on their Summer Work Assignments a few times a week. Also, we recommend you let your child see you reading along with them or just enjoying a great book by yourself!

Directions for Families:

- Please complete as much of the Summer Work Packet as you can.
- In September, the first 100 students to submit completed Summer Work Packets will receive a free gift!

Contents:

- 1) Summer Reading (Grades 3-8 Only): In addition to the ELA Activities, please see the directions for the Summer Reading.
- 2) ELA Activities: Please complete the attached reading activities. This includes about 10 days worth of activities, so you may want to consider completing 1-2 per week.
- 3) Math Conceptual Activities
- 4) Math Fluency Activities

Thanks for All you Do,
The Team at St. Malachy

Summer Reading:

Students Entering Grades 7-8:

1. Read the Required Reading Book of the Grade and keep a reading log to track when you're reading. Turn this in to your teacher in the first week of school.
2. Select one book from the Suggested Reads to complete a File Folder Project. (Directions for this project are attached.) Turn this in to your teacher in the first week of school.

Summer Reading
For Students Entering Eight Grade

□ **Required Reading:** *I am Malala: The Girl Who Stood Up for Education and was Shot by the Taliban* by Malala Yousafzai

Students **MUST** read **ONE** of the additional books:

Play Their Hearts Out: The Story of Demetrius Walker - John Feinstein

Dodger - Terry Pratchett

A Lesson Before Dying - Ernest Gaines

And Then There Were None - Agatha Christie

The Contender - Robert Lipsyte

The Westing Game - Ellen Raskin

Chains - Laurie Halse Anderson

Wonder - Raelin J. Palacio

Out of Nowhere - Maria Padian

The Girl Who Drank the Moon - Kelly Barnhill

False Prince -- Jennifer A. Nielsen

Edge of Everthing -- Jeff Giles

Divided We Fall -- Trent Reedy

Out of Nowhere -- Maria Padian

Scorpio Races -- Maggie Stiefvater

Endangered -- Eliot Schrefer

A Raisin in the Sun – Lorraine Hansberry

A Separate Peace – John Knowles

Little Women – Louisa May Alcott

The Call of the Wild – Jack London

A Tree Grows In Brooklyn – Betty Smith

All Quiet on the Western Front – Erich Maria Remarque

The Pearl - John Steinbeck

Between Shades of Gray – Ruta Sepetys

Warriors Don't Cry – Melba Patillo Beals

The Book Thief - Markus Zusak

Grades 5-8 Reading Log: June

Date	I read with parent / alone	Book	Pages	Task After Reading	Parent Signature / initials
				Connection (text-self)	
				Summary	
				New Vocabulary Word + Definition	
				Summary	
				Character Analysis	
				Connection (Text-to-Text)	

				Summary	
				Prediction	
				Connection (Text-to-World)	
				Summary	
				Illustration of a scene you visualized	

July Reading Log

Date	I read with parent / alone	Book	Pages	Task After Reading	Parent Signature / initials
				Connection (text-self)	
				Summary	
				New Vocabulary Word + Definition	
				Summary	
				Character Analysis	
				Connection (Text-to-Text)	

				Summary	
				Prediction	
				Connection (Text-to-World)	
				Summary	
				Illustration of a scene you visualized	

August Reading Log

Date	I read with parent / alone	Book	Pages	Task After Reading	Parent Signature / initials
				Connection (text-self)	
				Summary	
				New Vocabulary Word + Definition	
				Summary	
				Character Analysis	
				Connection (Text-to-Text)	

				Summary	
				Prediction	
				Connection (Text-to-World)	
				Summary	
				Illustration of a scene you visualized	



Summer READING PROJECT

Creating a
File Folder
Book Report

Name _____



Summer READING PROJECT

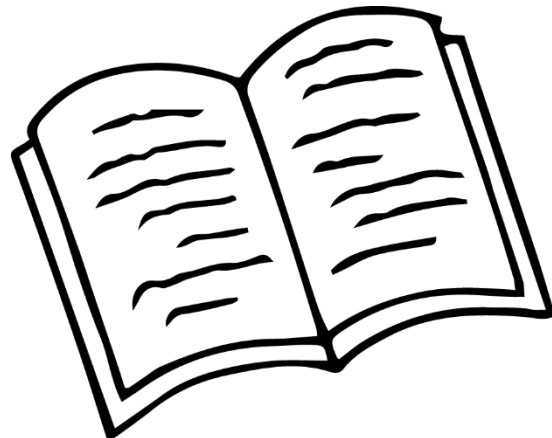
FILE FOLDER BOOK PROJECT

ABOUT

Over summer vacation you're required to read one book (of course you can read many more), and create a File Folder Book Project! Your File Folder Book Project will include a creative representation of the book's cover, a plot diagram, character chart, setting profile, theme analysis, personal reflection, and a listing of other books by the same author.

While reading the book, you will be completing first draft pages that require you to make note of the novel's plot, characters, setting, theme, and your personal reactions to the novel. Then, you will write final copies of each project element and assemble them in a file folder.

Your work on each element of the File Folder Book Project will showcase your understanding of the book you read. Your final project should be creative, detailed, insightful, and created with care!



EVALUATION



Your final project will be graded on your work on the first draft materials AND the quality of your work on the final File Folder Project. Check out the rubric to see exactly how your project will be evaluated. You should showcase your understanding of the novel and your creativity when completing the project.

ELEMENTS

Your file folder will include the following:

- A picture of the book's cover (illustrated by you or found on the internet)
- A plot diagram
- A character chart
- A setting review including an illustration (either by you or from another source)
- A theme analysis
- A personal reflection (over 12 sentences long)
- A listing of other books by the author of the book you read

MATERIALS

To complete your File Folder Book Project, you'll need:

- A book to read (something appropriate for your reading level)
- This packet filled with the directions, pre-write activities, and rough drafts
- A set of the final copy pages that you will be placing inside your File Folder Book Project
- A manila file folder
- Scissors, glue, colored pencils, and other decorative elements

FILE FOLDER BOOK PROJECT GRADING RUBRIC

	4	3	2	1
Required Elements	The final file folder project includes all the required elements of the assignment as well as additional information.	All required elements are included.	All but one of the required elements are included.	Several required elements are missing.
Content	The project reflects deep understanding and accuracy regarding the book.	The project reflects understanding and accuracy regarding the book.	The project reflects some understanding and accuracy regarding the book.	The project reflects little understanding and accuracy regarding the book.
Originality	Several of the elements of the final product reflect an exceptional degree of creativity and originality.	Several elements reflect student creativity in their creation and/or design.	Few elements reflect student creativity in their creation and/or design.	No evidence of creativity and originality.
Attractiveness	The final project is exceptionally attractive in terms of design, layout and neatness.	The final project is attractive in terms of design, layout, and neatness.	The final project is acceptably attractive, though it may be a bit messy.	The final project is distractingly messy or poorly designed.
Grammar, Mechanics, and Spelling	Grammar, mechanics, and spelling are correct throughout the project.	There are one – two errors in grammar, mechanics, and spelling.	There are three errors in grammar, mechanics, and spelling.	There are four or more errors in grammar, mechanics, and spelling.

TOTAL: First Draft Packet _____/15 + File Folder Book Project _____/20= _____ / **35**

Summer

READING PROJECT

FILE FOLDER BOOK PROJECT

STEPS

1. Select a book to read that is at your reading level.
2. While reading your book, make notes about the novel's plot, characters, setting, theme, and your personal reactions to the book. Make your notes on the FIRST DRAFT pages.
3. After you have finished your book and completed all of your FIRST DRAFT pages, review your work. Check your work for accuracy, spelling, mechanics, and grammar. Find ways to improve your first draft pages. Remember, your work on the FIRST DRAFT will also be graded.
4. Begin working on your FINAL COPY pages. Write neatly. Do your best work!
5. Assemble your File Folder Book Project.
 - You will need:
 - Your FINAL COPY pages
 - A file folder
 - Glue
 - Scissors
 - Any pictures you plan to include (For example: the book cover, other books, a scene from the book)
 - Art Supplies to "jazz up" your project (markers, glitter, stickers, colorful paper)
 - Follow the template for how to put together the file folder.
6. Review your File Folder Book Project. Make sure that it is free from errors and represents your best effort.
7. Place your FIRST DRAFT materials inside of the file folder. Bring your File Folder Book Project back to school on _____.

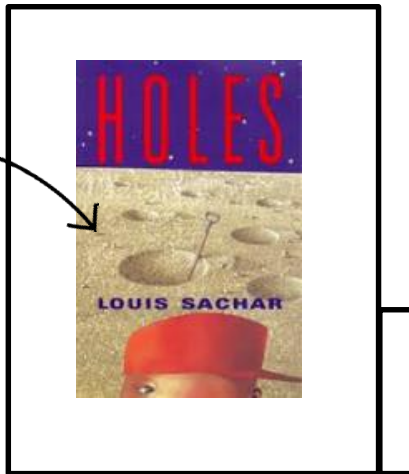
Summer

READING PROJECT

How to assemble the FILE FOLDER BOOK PROJECT

FRONT COVER

Book Cover Design



INSIDE

Plot Diagram

The image shows the inside of the file folder book project. It is divided into two main sections. The left section is titled 'PLOT' and contains a plot diagram with a star at the peak and a line leading to a box. Below the plot diagram is a 'CHARACTER CHART' table with columns for 'CHARACTER NAME (include nicknames)', 'PHYSICAL TRAITS', and 'PERSONALITY TRAITS'. The right section is titled 'SETTING' and contains a large box for 'Setting Description & Picture'. Below the setting section is a 'THEME' section with a vertical label 'THEME' and a box for 'Theme Analysis'. The bottom of the page is labeled 'CHARACTERS'.

Setting Description & Picture

Character Chart

Theme Analysis

BACK COVER

Personal Review

The image shows the back cover of the file folder book project. It features a 'REVIEW' section with a vertical label 'REVIEW' and a large box for writing. At the bottom right, there is a section for 'OTHER BOOKS' with a vertical label 'OTHER BOOKS' and a box for listing other books by the same author. A small icon of a book is at the bottom left.

Listing of Other Books by the Same Author

First Draft

MATERIALS



PLOT

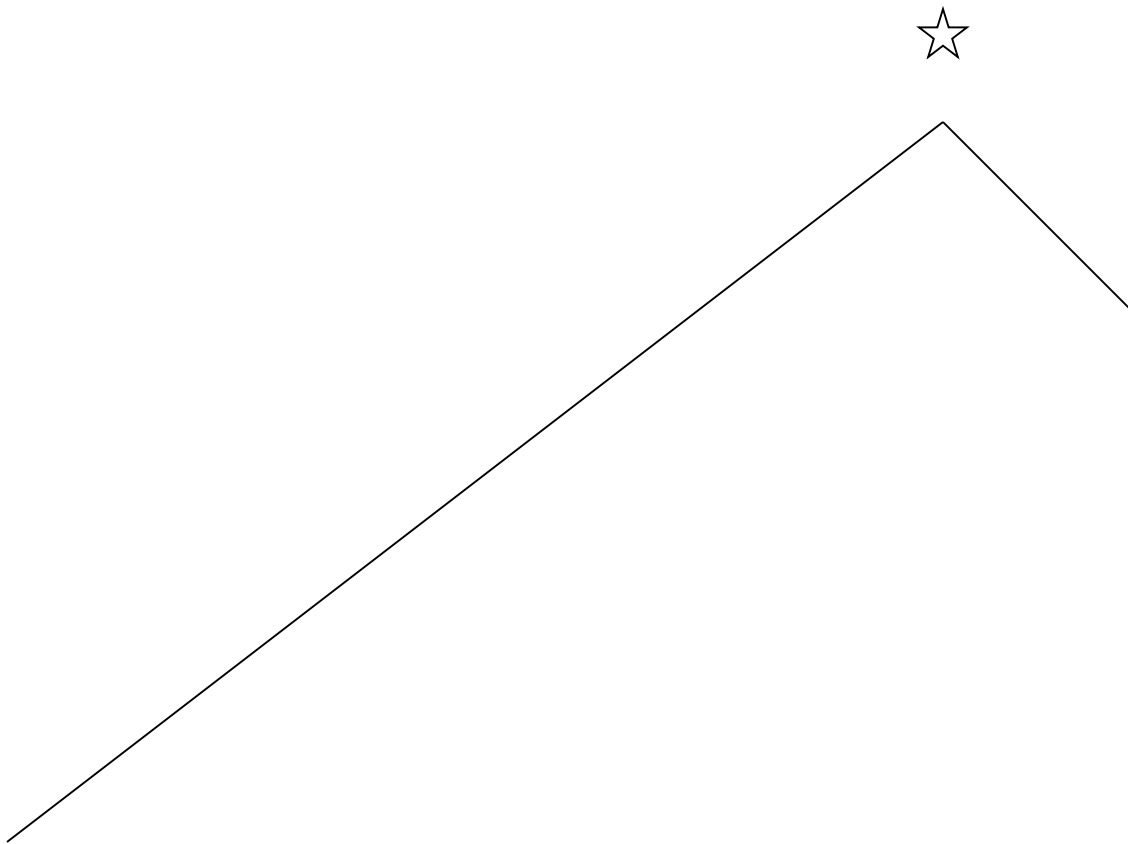
In your File Folder Project you will be charting 10 major plot events from the novel. While reading your book, list the plot events below in sequential order (number one should be an event from the beginning of the book and number ten should be an event at the end of the book). Then, complete the first draft of the plot diagram on the next page.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Now...place a star next to the most exciting part of the novel. This will represent the **climax** of the story. It usually occurs toward the end of the novel.

PLOT DIAGRAM

Plot the ten events on the diagram below. This diagram will be your first draft. The event that you put a star next to will be the climax of the story. The events leading up to the climax will be the rising action of the plot. After the climax, the remaining events will be the resolution or falling action.



NEXT STEPS:

- Review the spelling and punctuation of the plot diagram.
- Transfer the information from the first draft onto the final copy plot diagram provided to you.
- Glue the final copy of the plot diagram to the inside of the folder - left side, top of the folder.

CHARACTERS

Choose three significant characters from the book. Complete the chart below. List the characters' names (include nicknames if applicable). Fill in the physical traits section of the chart with information about the way characters look and dress. The personality traits section of the chart should include what the character acts like.

CHARACTER NAME (include nicknames)	PHYSICAL TRAITS	PERSONALITY TRAITS

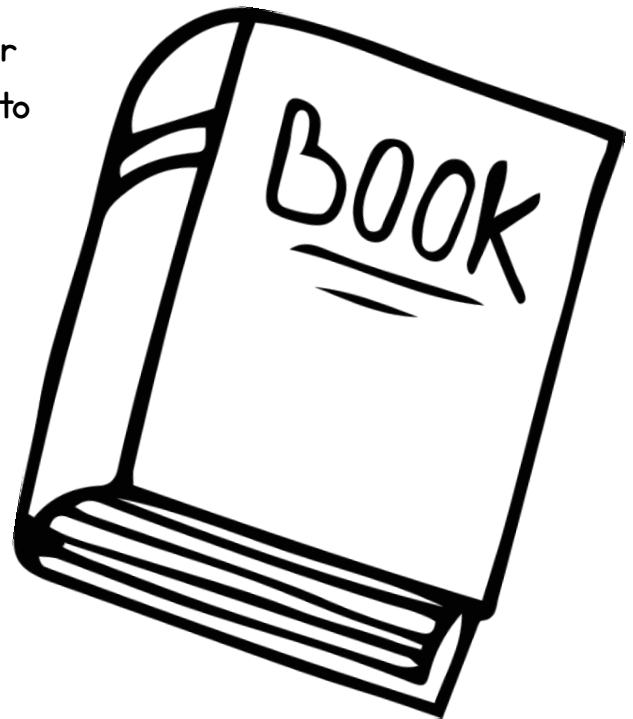
Answer the following question.

What has the main character learned about himself/herself or about others through his/her experiences in the novel?

CHARACTERS

NEXT STEPS:

- Take a look at the character traits that you included in the chart. Are there any words that can be swapped out for more advanced vocabulary? Is it possible to add even more traits for each character?
- Review the spelling and punctuation of the first draft character chart and short response question.
- Transfer the information from your draft to the final copy character chart provided for you.
- Glue the final copy of the character chart and short response question to the inside of the folder - left side, bottom of the folder.





SETTING

Select a memorable scene location from the book (examples - bus stop, friend's house, park, desert).

WHERE does the scene take place?

LIST details/adjectives to describe the scene.

WHEN does this scene occur in the book?

For the final file folder you will need to include a picture or illustration of the scene you described above. Here are some options for the scene picture:

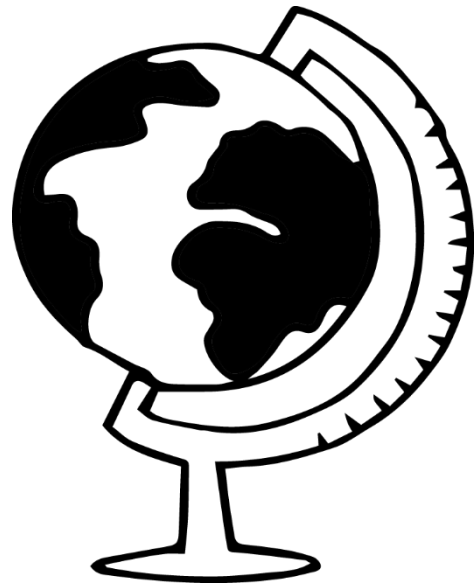
- Draw the scene.
- Print a picture to represent the scene location.
- Cut out magazine pictures to represent the scene location.

The box below represents the amount of space you will have for the scene picture. Practice or plan out your illustration below.

SETTING

NEXT STEPS:

- Take a look at your plan for the setting picture. You'll want to make this image visually appealing. Consider ways to make it colorful and bold.
- Review the spelling and punctuation of your answers in response to the questions about the setting.
- Transfer the information from your draft to the final copy setting space provided for you.
- Glue the final copy to the inside of the folder - right side, top of the folder.





THEME

When you have finished reading your book, you can complete this page in your
FIRST DRAFT packet.

You need to determine a theme for the book. The theme should be a lesson or
message that applies to the world (not just the story). It's what the author
wants the reader to learn about life.

To determine the theme consider:

What are the main things that happened in the book?

- 1.
- 2.
- 3.

What do these events teach the reader about life?

What is the author's message or theme?

THEME

NEXT STEPS:

- Review the spelling and punctuation of the first draft of your theme analysis.
- Transfer the information from your draft to the final copy theme analysis space provided for you.
- Glue the final copy to the inside of the folder - right side, bottom of the folder.





REVIEW

It's time to get reflective about the book you read. Answer the following questions in a very thoughtful and detailed manner. Restate the question in each of your responses.

1. What were your feelings after reading the opening chapter(s) of this book? After reading half of the book? After finishing the book?
2. Did the book make you laugh? Cry? Smile? Cheer? Explain your reaction or add your own.
3. What connections are there between the book and your own life? Explain.
4. What are the best parts of the book? Why?
5. What are the worst parts of the book? Why?
6. Do you like the way the book ended? Why or why not?
7. Rate the book between 1-10 (ten being the highest). Explain your rating.



REVIEW

Now, combine your answers to the personal reflection questions 1-7 to create a well-developed paragraph. Practice below.

FYI - At least twelve well-written sentences need to be included. The lines below represent the amount of space provided for the review. If you run out of room add an additional piece of paper and tape it to final copy paper provided for you.

NEXT STEPS

- Review the spelling and punctuation of the first draft review above.
- Transfer your writing to the final copy review paper provided for you.
- Glue the final copy to the back of the folder along the top.

OTHER BOOKS

List other books written by the same author as the book you just read.

Here are some ways to locate the titles of other books:

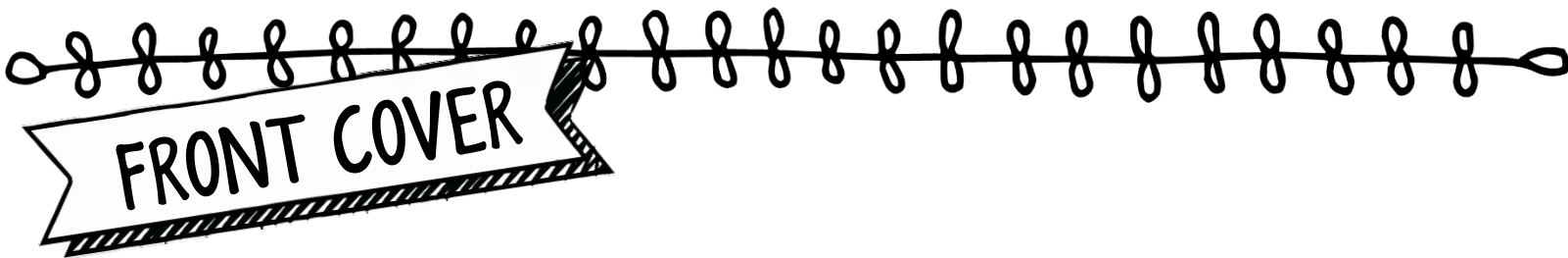
- Look for other titles listed in the book.
 - Go to the library.
 - Search the internet.

Be sure to use the correct capitalization and punctuation rules when writing each title.

List the titles below:

NEXT STEPS

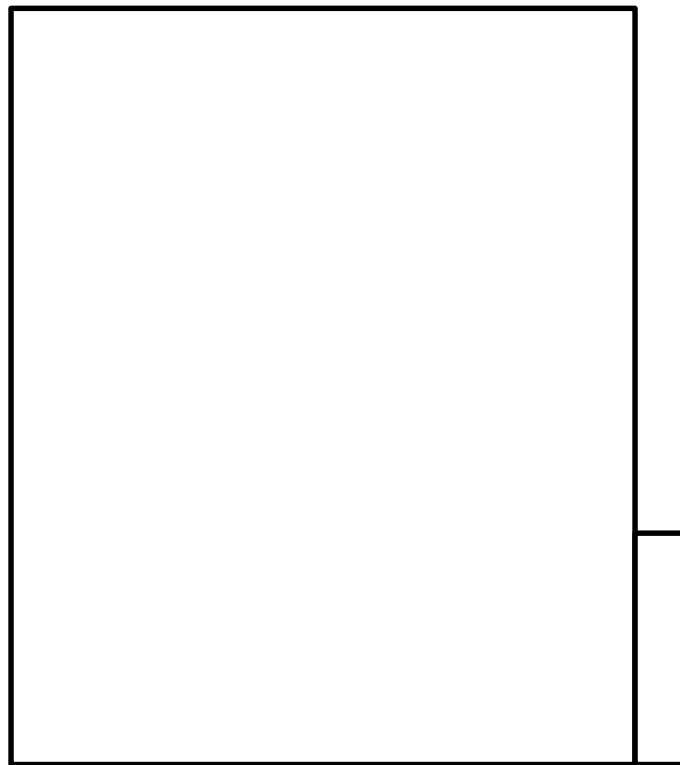
- Review the spelling, capitalization, and punctuation of the titles above
- Transfer the listing of titles to the “other books” space provided for you.
- Glue the final copy to the back of the folder along the bottom.



The front cover of your project should be bold, creative, and high quality.
It must include the book's title and author.

Brainstorm ideas for your project cover design below. You may want to try to get an image of the book cover from the internet, draw your own illustration, or design a new cover. Feel free to add other images that relate to the novel, decorations, and creative elements to the cover.

COVER BRAINSTORM:



NEXT STEPS:

- Make sure you have a creative design for your front cover.
- Assemble the materials you will need and then design your project's front cover.



- SAVE this PACKET! After you complete your Summer Reading Project, stick this packet inside your folder and turn it in with your File Folder Project. The completion of this packet is also part of your grade.
- Remember that your Summer Reading Project will be your teacher's first impression of you at the start of the next school year, so make sure to showcase your best effort.
- Try to complete this project throughout the summer. Spread out the assignments and tasks. Trying to complete your reading, the drafts, and the final copy only days before it's due would be a major undertaking.
- Don't be afraid to put a creative spin on your project. Add color, pictures, and decorative elements to take your project to the next level.
- Read through all of your final copy elements to make sure that your grammar, mechanics, and spelling are correct.
- If you run out of room to write any of the final copy materials, continue your response on another piece of paper. Then, attach your paper to the file folder.
- You're welcome to type any or all of the elements of this project. You'll just want to size your typed worked so that it fits in the folder correctly.
- Don't let this project limit you to reading only one book this summer. Read a bunch of books!

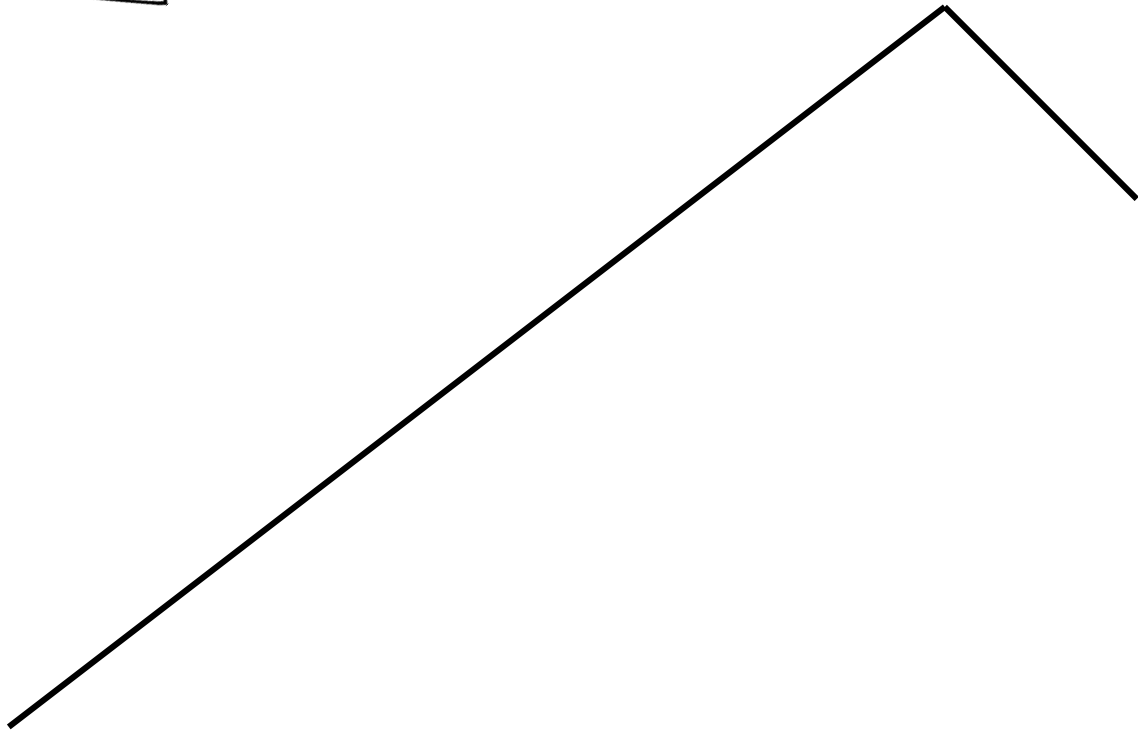
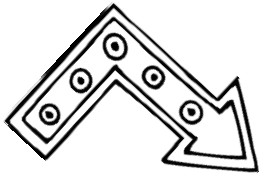
FINAL COPY MATERIALS



Final Copy

MATERIALS

Cut out each file folder element by cutting along the dotted lines of each shape. You'll want to be sure to include the words Plot, Characters, Setting, Theme, Review, and Other Books when cutting out the shapes. Glue each shape into its specified location on your file folder.



Use your first draft brainstorm to complete the character chart and question below. Since this is your final copy, be sure to write neatly. Then, cut out the shape along the dotted lines. Glue the shape under the "Plot" shape on the inside of the folder - left side, bottom.

CHARACTER NAME (include nicknames)	PHYSICAL TRAITS	PERSONALITY TRAITS

What has the main character learned about himself/herself or about others through his/her experiences in the novel?

CHARACTERS

Use your first draft brainstorm to fill in the setting details on the lines provided. Then, draw or add a printed picture that represents a significant setting from your book. You may want to add labels to take your illustration to the next level. Finally, cut out the setting shape and glue it inside your project folder - right side, top.

SETTING

WHERE does the scene take place?

LIST details/adjectives to describe the scene.

WHEN does this scene occur in the book?



Use your first draft brainstorm to fill in the theme details below. Then, cut out the theme shape and glue it inside your project folder - right side, bottom.

What are the main things that happened in the book?

- 1.
- 2.
- 3.

What do these events teach the reader about life?

What is the author's message or theme?

THEME

Write you're a final copy of your personal review below. Then, cut out the shape.
Finally, glue the shape to the back of the folder along the TOP.

REVIEW

Use the listing of books by the same author that you compiled in your FIRST DRAFT to fill in the shape below. Include books by the same author. Then, cut out the shape. Finally, glue the shape to the back of the folder under your REVIEW.



OTHER BOOKS

Summer Work Packet



ELA - English Language Arts
Activities for 10 days

English Language Arts

Grade 7

Days 1 & 2

Genre: Poetry

Task: Read three or more poems. Read at least 2 poems and complete the activity below on Day 1. Choose 2 or more different poems and complete the activity below on day 2.

Day 1 & 2 Directions:

1. Chose at least three poems to read:
 - a. <https://allpoetry.com/famous-poems>
 - b. <https://poets.org/>
2. For each poem that you read, select a line or two that you think is particularly well-written. Copy down the line(s) and write a response explaining what you noticed the poet did to create such a strong piece of writing.

*These web sites are not controlled or approved by the NYC Department of Education

While you read:

- Many forms of poetry frequently use imagery, figurative language and sound devices to create meaning.
- It often helps to read a poem multiple times to interpret its meaning. It also helps to divide the poem into smaller sections – for example by stanzas or by lines. As you read each section, think about these two big questions: What is actually happening in this section? And what does it mean?
- After you have read three poems of your choice, compare and contrast how each poet uses poetic devices such as rhyme, repetition, alliteration, line breaks, or white space to create meaning.



Days 3 & 4

Genre: Poetry

Task: Write a poem.

Day 3 Directions:

Write a poem that tells an important story from your life.

Brainstorm & Draft

While you write:

- To generate ideas for your piece, brainstorm a list of important moments in your life. For example, these could be moments when you learned something important, when you felt particularly proud or when you shared an experience with a special person.
- Use some of the poetic devices such as rhyme, repetition, alliteration, line breaks, or white space to create meaning.
- Be sure to use sensory details to help the reader picture the images in the poem.
- As you draft your poem, pay attention to how you arrange words on the page. Think about how line breaks and white space can impact the sound and meaning of your poem.

Day 4 Directions:

Revise & Finalize



Days 5 & 6

Genre: Pro/Con Article

Task: Read two or more pro/con articles.

Day 5 Directions:

1. Read the following article:

- “The Pros and Cons of Electronic Textbooks”

http://articles.chicagotribune.com/2013-08-07/features/ct-x-0807-college-kids-eyes-20130807_1_print-textbooks-digital-textbooks-computer-vision-syndrome

Or choose an article of interest at:

http://galesupport.com/novelGeo/novelGeoLink.php?loc=nysl_me_nycitysl&db=OVIC

*These web sites are not controlled or approved by the NYC Department of Education

2. After you have finished reading, write a summary of the article. Then write a short response about how the article has influenced your thinking on the topic.

Day 6 Directions:

1. Read the following article:

- “Teen tracking Apps: Good Parenting or Risky?”

<http://www.usatoday.com/story/tech/personal/2014/09/17/teens-parents-tracking-apps-security-mamabear-teensafe/15716335/>

2. After you have finished reading, write a summary of the article. Then write a short response about how the article has influenced your thinking on the topic.

While you read:

- Pro/Con articles give both sides to an issue. The writer presents both the benefits (pro) and the drawbacks (con) surrounding a topic or issue without explicitly stating his or her opinion.
- As you read an article, pay attention to details the writer shares about the topic. You may want to label which details are positive and which are negative.
- As you read, jot down any questions you have. These questions can be based on parts you find confusing or parts you want to know more about.
- After you have read two articles, compare and contrast how each writer develops the central idea in the article. You could compare how the writers use facts, examples, quotations and other supporting details, how the ideas are organized or the tone of the articles.



Days 7 & 8

Genre: Pro/Con Article

Task: Write a pro/con article.

Day 7 Directions:

Write an article explaining the benefits (pro) and drawbacks (con) of technology in teenagers' lives. Today research, brainstorm, and draft

Day 8 Direction:

Revise & Finalize

While you write:

- The purpose of a pro/con article is to inform the reader and explain both sides of an issue. It is not a place to share your opinion and try to persuade the reader to agree with you. In your article, you will include some positive aspects of technology and some negative aspects.
- Brainstorm a list of how technology can benefit teenagers, both in school and out of school. Then make a list of how technology can negatively impact a teenager. Think of specific supporting details that illustrate your points, including examples and anecdotes from your life. You may also want to research the topic to find facts and quotations from reliable sources to include in your article.
- Be sure to include an introduction that sparks a reader's interest and clearly states your topic and a conclusion that ties the article together and leaves the reader with something to think about. You can refer to the articles provided for Day 1 as models for how to structure your article.



Days 9 & 10

Independent Reading

Directions:

Read a book of your choosing. Write the title and author below.

** A note to parents and guardians: Talk with your children about the books they are reading.*

If you would like an e-book, go to <https://www.nypl.org/books-music-movies/ebookcentral>

Title: _____

Author: _____

After Reading:

Read the next chapter in the book of your choice and identify one or two key ideas that you find especially interesting and important. Write specific details from the text that give information about the key ideas.

Complete the Key Ideas chart:

Important and interesting ideas	Specific details from the text

Writing: Using the information you recorded in your Key Ideas chart, write a paragraph to analyze why one or more key ideas you identified are especially interesting and important. Include specific details from the text that support your analysis.

Summer Work Packet



Math - Conceptual Practice

NAME _____

DATE _____

Multiplication & Division Facts

1 Complete the multiplication facts.

$$\begin{array}{r} 0 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$$





$$\begin{array}{r} 6 \\ \times 7 \\ \hline \end{array}$$

2 Complete the division facts.

$42 \div 6 = \underline{\quad\quad}$
 $54 \div 6 = \underline{\quad\quad}$
 $24 \div 3 = \underline{\quad\quad}$

$63 \div 9 = \underline{\quad\quad}$
 $28 \div 4 = \underline{\quad\quad}$
 $7 \div 1 = \underline{\quad\quad}$

3 Write a greater than, less than, or equal sign to complete each number sentence. Try to complete each number sentence without doing all the calculations.

example $36 + 4 < 26 + 20$	a 2×24 2×16
b $400 \div 80$ $400 \div 10$	c $77 - 20$ $67 - 20$
d $36 + 23$ $46 + 16$	e $458 - 129$ $358 - 29$
 f 3×360 40×30	 g 50×400 400×50
 h $2,500 \div 10$ $1,000 \div 5$	 i $24,000 \div 6$ $48,000 \div 12$

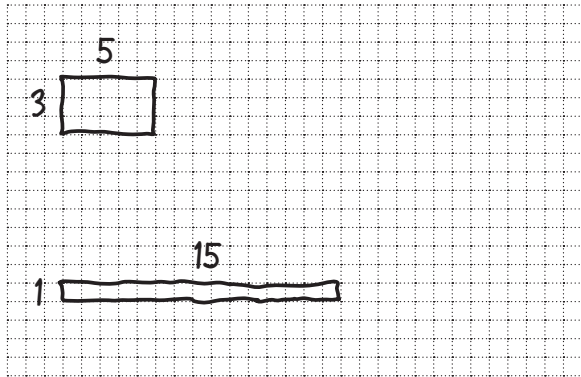
NAME _____

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Finding Factor Pairs

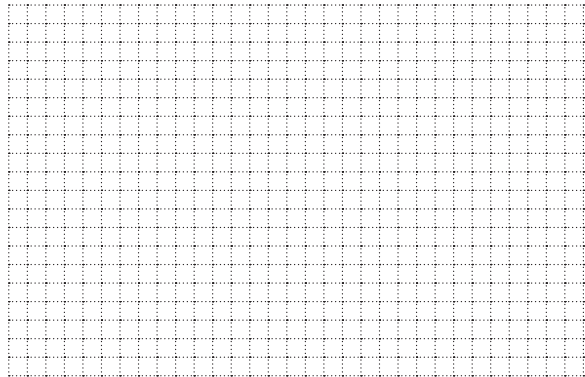
1 Draw and label rectangles to show all the factor pairs for each number. Then write the factor pairs in the space provided.

example 15



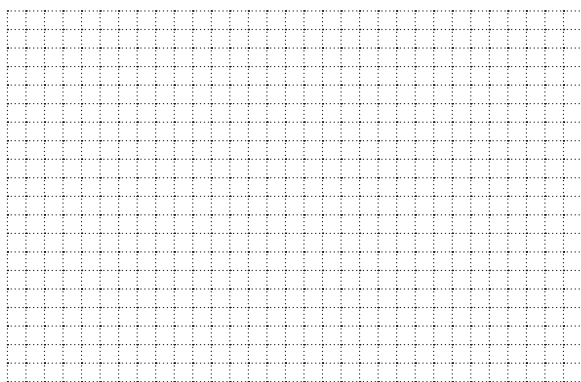
Factors of 15 3, 5, 1, 15

a 18



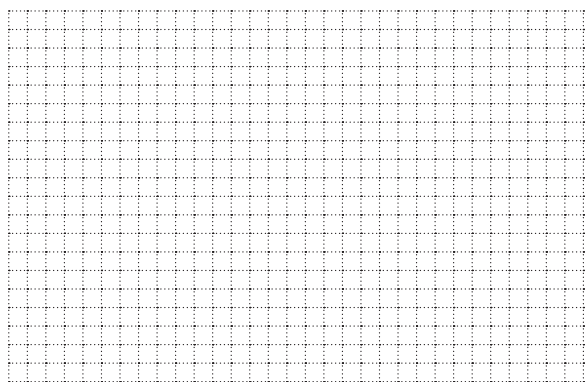
Factors of 18 _____

b 24



Factors of 24 _____

c 28



Factors of 28 _____



CHALLENGE

2 Find all the factor pairs for 100. Sketch rectangles on another sheet of paper to help if you need to.

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Multiplication Practice

1 Solve the following multiplication problems.

$$\begin{array}{r} 20 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 30 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 40 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 40 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 50 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 50 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 50 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 70 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 70 \\ \times 3 \\ \hline \end{array}$$

$$\begin{array}{r} 90 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 80 \\ \times 7 \\ \hline \end{array}$$

$$\begin{array}{r} 80 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 90 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 80 \\ \times 9 \\ \hline \end{array}$$

$$\begin{array}{r} 40 \\ \times 8 \\ \hline \end{array}$$

2 Solve each problem below using the partial products method shown.

$$\begin{array}{r} 135 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 27 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 29 \\ \times 5 \\ \hline \end{array}$$

$$\begin{array}{r} 57 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{l} 4 \times 100 = 400 \\ 4 \times 30 = 120 \\ 4 \times 5 = + 20 \\ \hline 540 \end{array}$$

$$\begin{array}{r} 53 \\ \times 8 \\ \hline \end{array}$$

$$\begin{array}{r} 108 \\ \times 6 \\ \hline \end{array}$$

$$\begin{array}{r} 217 \\ \times 4 \\ \hline \end{array}$$

$$\begin{array}{r} 433 \\ \times 6 \\ \hline \end{array}$$

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Multiples of 3 & 4

1a Circle the rest of the multiples of 3.
(count-by-3 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 3?

2a Circle the rest of the multiples of 4.
(count-by-4 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 4?

3 What do you notice about the numbers that are multiples of both 3 and 4?

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Multiples of 6 & 7

1a Circle the rest of the multiples of 6.
(count-by-6 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 6?

2a Circle the rest of the multiples of 7.
(count-by-7 numbers)

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

b What do you notice about the multiples of 7?

3 What numbers are multiples of both 6 and 7?

4 What would be the first multiple of 6 and 7 that is greater than 100? Explain how you know.

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Addition & Subtraction Review

1 Solve the addition problems below.

$$\begin{array}{r} 457 \\ + 142 \\ \hline \end{array}$$

$$\begin{array}{r} 387 \\ + 414 \\ \hline \end{array}$$

$$\begin{array}{r} 609 \\ + 734 \\ \hline \end{array}$$

$$\begin{array}{r} 1,589 \\ + 3,437 \\ \hline \end{array}$$

2 Solve the subtraction problems below.



$$\begin{array}{r} 803 \\ - 547 \\ \hline \end{array}$$

$$\begin{array}{r} 745 \\ - 548 \\ \hline \end{array}$$

$$\begin{array}{r} 985 \\ - 237 \\ \hline \end{array}$$

$$\begin{array}{r} 3,581 \\ - 1,346 \\ \hline \end{array}$$

3 Fill in the missing numbers to make each equation true.

a $100 = \underline{\hspace{2cm}} + 30$	b $100 \times \underline{\hspace{2cm}} = 1,000$
c $4 = \underline{\hspace{2cm}} \div 9$	d $\underline{\hspace{2cm}} = 100 - 56$
 e $18 \times 2 = \underline{\hspace{2cm}} \times 4$	 f $90 \div \underline{\hspace{2cm}} = 5 \times 9$

4 Fill in the missing digits.

example

$$\begin{array}{r} 5 \boxed{3} \boxed{6} \\ - 248 \\ \hline \boxed{2}88 \end{array}$$

a

$$\begin{array}{r} \square 0 \square \\ - 1 \square 9 \\ \hline 223 \end{array}$$

b

$$\begin{array}{r} \square 82 \\ - 1 \square \square \\ \hline 405 \end{array}$$

c

$$\begin{array}{r} \square 246 \\ - 1 \square 2 \square \\ \hline 29 \square 7 \end{array}$$

d

$$\begin{array}{r} 30 \square 8 \\ - 1 \square 9 \square \\ \hline \square 712 \end{array}$$

e

$$\begin{array}{r} 506 \square 3 \\ - \square 7 \square 55 \\ \hline 1 \square 13 \square \end{array}$$

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Run for the Arts

1 Stephanie is 11 years old. Her sister Emma is 9 years old. They are doing Run for the Arts at their school. Stephanie wants people to make pledges based on the number of miles she runs. Emma just wants people to pledge a certain amount of money. Their grandma pledged \$36 for Emma and \$8 per mile for Stephanie. Their uncle pledged \$18 for Emma and \$7 per mile for Stephanie. How many miles will Stephanie need to run to earn more money than Emma?

a Restate the question in your own words:

b Underline the information in the problem you *do* need to solve the problem.

c Cross out the information in the problem you *don't* need to solve the problem.

d Solve the problem. Show all your work.

e Does your answer make sense? Explain how you can tell.

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Order of Operations



The order of operations tells you how to do calculations when there is more than one kind of operation.

Order of Operations	Example
	$20 - 12 \div (3 + 1)$
1. Anything inside parentheses	$20 - 12 \div (3 + 1) = 20 - 12 \div 4$
2. Multiplication and division from left to right	$20 - 12 \div 4 = 20 - 3$
3. Addition and subtraction from left to right	$20 - 3 = 17$

1 Use the order of operations above to complete each equation.

a $(9 + 3) \times (16 \div 8) \div 4$	b $(365 + 35) \div 5 + 3$
c $36 \div 6 + 4 \times (27 \div 9)$	d $(26 - 18) \times 5 \div 10 + 10$

2 Insert parentheses to make each equation true.

a $2 \times 18 - 5 + 15 \div 5 = 32$	b $34 - 20 \div 4 + 3 = 2$
 c $14 = 50 - 42 \div 3 + 4 \times 6$	 d $21 = 7 + 16 - 8 \div 2 + 2 \times 25 \div 5$



CHALLENGE

3 Using at least two operations, write an expression that is the same whether you do the calculations from left to right or using the correct order of operations.

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Understanding & Using Number Properties

If you are adding or multiplying, you can change the order of the numbers or the way they are grouped to make the calculations easier. The three properties below can make mental math easier.

Commutative Property	Associative Property	Distributive Property
Changing the order of two numbers or numerical expressions when you add or multiply does not change the answer.	Changing the way you group three numbers or numerical expressions when you add or multiply does not change the answer.	You can break a number apart, multiply each part separately, and then add the products. You will still get the same answer.
$5 + 2 = 2 + 5$ $5 \times 2 = 2 \times 5$	$(38 \times 4) \times 25 = 38 \times (4 \times 25)$ $= 38 \times 100$ $= 3,800$	$6 \times 13 = 6 \times (10 + 3)$ $= 6 \times 10 + 6 \times 3$ $= 60 + 18$ $= 78$

1 For each problem below:

- Write it a different way so it's easier to solve in your head.
- Solve it and write the answer.
- Circle C if you switched the order of the numbers.
- Circle A if you grouped the numbers in a different way.
- Circle D if you broke the number apart and multiplied one part at a time.
- You may need to circle more than one property.

Problem	Rewrite	Answer	Property
ex $(70 + 469) + 30$	$(70 + 30) + 469$	569	C A D
a $(69 + 45) + 55$			C A D
b 4×32			C A D
c $4 \times (16 \times 25)$			C A D
d $(250 + 86) + 50$			C A D

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Prime Factorization

1 Show the prime factorization for each number. Then use the prime factors to help determine *all* the factors of that number.

Number	Prime Factorization	All the Factors (Thinking of Factor Pairs)
ex 105		1, 105 3, 35 5, 21 7, 15
a 18		
b 45		
c 72		

2 What factors do 18, 45, and 72 have in common?

3 What is the *greatest* factor that 18, 45, and 72 have in common?

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Rounding Decimals

When you are rounding, look at the digit one place to the right of where you want to round. If you round to the nearest one, look at the digit in the tenths place. If you round to the nearest ten, look at the digit in the ones place. If the digit is 5 or higher, round up. If it is less than 5, round down.

1 Underline the number in the tenths place. Then circle *up* or *down* to show whether you are rounding up or down. Then round the number to the nearest one.

ex 11. <u>7</u> 2 rounds <u>up</u> /down to <u>12.00</u> .	a 2.47 rounds up/down to _____.
b 33.29 rounds up/down to _____.	c 4.56 rounds up/down to _____.

2 Underline the number in the ones place. Then circle *up* or *down* to show whether you are rounding up or down. Then round the number to the nearest ten.

ex 14. <u>8</u> 9 rounds up/ <u>down</u> to <u>10.00</u> .	a 17.28 rounds up/down to _____.
b 35.67 rounds up/down to _____.	c 43.05 rounds up/down to _____.

3 Use rounding and estimation to answer the questions below without doing all the calculations. Fill in one circle to answer each question.

a Chris read a really great book that he thinks his friends would like too. Each copy of the book costs \$7.99. If Chris has \$32, can he buy a copy for each of his four friends?

Yes, he has enough money. No. He does not have enough money.

b Melissa wants to buy 3 magazines. She has \$6 and each magazine costs \$2.65. Does she have enough money to buy 3 magazines?

Yes, she has enough money. No. She does not have enough money.

c Frank is buying ham to make sandwiches for a picnic. He has \$25 and the ham costs \$6.79 per pound. Does he have enough money to buy 3 pounds of ham?

Yes, he has enough money. No. He does not have enough money.

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Time Calculations

1 There are _____ minutes in an hour.

2 Complete the table below.

Add these times	Your Work	Your Answer in Hours & Minutes
ex 45 mins. + 45 mins.	$45 + 45 = 90$ $90 - 60 = 30$	1 hour, 30 mins.
a 45 mins. + 90 mins.		
b 30 mins. + 45 mins.		
c 60 mins. + 90 mins.		

3 Shanda's mom dropped her and her friend Lisa off at the park at 2:00 pm. She said she would come back for them at 5:00 pm. Shanda and Lisa spent 45 minutes on the playground and 30 minutes talking to some other friends at the water fountain. Then they decided they wanted to spend the rest of their time at the pool. How much time do they have to spend at the pool before Shanda's mom comes back? Show all your work.

4 Carlos sleeps from 8:30 at night until 6:15 in the morning. His brother Miguel sleeps from 9:00 at night until 7:00 in the morning. Who gets more sleep each night, Carlos or Miguel? Explain how you know.

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Chin's Vegetable Patch

1 Chin is using 36 feet of leftover fencing his neighbor gave him to make a rectangular vegetable patch in his backyard. He wants to use up all the fencing and make the patch have the largest area possible. What should be the dimensions of Chin's vegetable patch?

a Restate the question in your own words:

b Solve the problem. Show all your work.



CHALLENGE

2 Use numbers, words, and/or sketches to describe any patterns you noticed while solving this problem.

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Using Basic Facts to Solve Larger Problems

Knowing the basic multiplication and division facts can help you multiply larger numbers. Start with the basic facts below and then complete the related fact family of larger numbers. Then make up your own fact family based on other related numbers.

Basic Fact Family	Related Fact Family	Your Own Related Fact Family
example $4 \times 3 = 12$ $3 \times 4 = 12$ $12 \div 4 = 3$ $12 \div 3 = 4$	$40 \times 3 = 120$ $3 \times 40 = 120$ $120 \div 40 = 3$ $120 \div 3 = 40$	$40 \times 30 = 1,200$ $30 \times 40 = 1,200$ $1,200 \div 40 = 30$ $1,200 \div 30 = 40$
1 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $6 \times 8 = 48$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$ $48 \div 6 = 8$	$80 \times 6 = 480$ $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $480 \div 80 = 6$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$	$\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$
2 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $9 \times 4 = 36$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$ $36 \div 9 = 4$	$40 \times 9 = 360$ $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $360 \div 40 = 9$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$	$\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$
3 $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $7 \times 3 = 21$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$ $21 \div 7 = 3$	$30 \times 7 = 210$ $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $210 \div 30 = 7$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$	$\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $\underline{\quad} \times \underline{\quad} = \underline{\quad}$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$ $\underline{\quad} \div \underline{\quad} = \underline{\quad}$

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Multiplying by Multiples of 10

1 Complete the following multiplication problems.

$$\begin{array}{r} 10 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 100 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 1,000 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 200 \\ \times 10 \\ \hline \end{array}$$

$$\begin{array}{r} 20 \\ \times 20 \\ \hline \end{array}$$

2 Use each number below just one time to complete the multiplication problems.

3	6	30	60
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$$\begin{array}{r} 80 \\ \times \boxed{} \\ \hline 2400 \end{array}$$

$$\begin{array}{r} 70 \\ \times \boxed{} \\ \hline 420 \end{array}$$

$$\begin{array}{r} 40 \\ \times \boxed{} \\ \hline 2400 \end{array}$$

$$\begin{array}{r} 60 \\ \times \boxed{} \\ \hline 180 \end{array}$$

3 Complete each basic fact and the related multiplication problem. Then write and solve another multiplication problem you could solve with that basic fact. You can use numbers that are as big as you want them to be.

Basic Facts	Related Problem	Your Own Problem and Solution
ex $4 \times 5 = \underline{20}$	$40 \times 5 = \underline{200}$	$40 \times 500 = 20,000$
a $6 \times 4 = \underline{\hspace{2cm}}$	$60 \times 40 = \underline{\hspace{2cm}}$	
b $8 \times 7 = \underline{\hspace{2cm}}$	$80 \times 7 = \underline{\hspace{2cm}}$	
c $3 \times 9 = \underline{\hspace{2cm}}$	$30 \times 9 = \underline{\hspace{2cm}}$	
d $9 \times 6 = \underline{\hspace{2cm}}$	$90 \times 60 = \underline{\hspace{2cm}}$	
e $9 \times 4 = \underline{\hspace{2cm}}$	$90 \times 4 = \underline{\hspace{2cm}}$	

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Using the Standard Multiplication Algorithm

1 Solve these multiplication problems.

$$\begin{array}{r} 80 \\ \times 30 \\ \hline \end{array}$$

$$\begin{array}{r} 80 \\ \times 40 \\ \hline \end{array}$$

$$\begin{array}{r} 90 \\ \times 30 \\ \hline \end{array}$$

$$\begin{array}{r} 90 \\ \times 40 \\ \hline \end{array}$$

$$\begin{array}{r} 100 \\ \times 30 \\ \hline \end{array}$$

$$\begin{array}{r} 100 \\ \times 40 \\ \hline \end{array}$$

2 Solve these multiplication problems using the standard algorithm. Use the answers above to help make sure your answers are reasonable.

<p>ex</p> $\begin{array}{r} 2 \\ 84 \\ \times 36 \\ \hline 504 \\ + 2,520 \\ \hline 3,024 \end{array}$	<p>a</p> $\begin{array}{r} 79 \\ \times 26 \\ \hline \end{array}$
<p>b</p> $\begin{array}{r} 86 \\ \times 32 \\ \hline \end{array}$	<p>c</p> $\begin{array}{r} 92 \\ \times 37 \\ \hline \end{array}$
<p>d</p> $\begin{array}{r} 82 \\ \times 43 \\ \hline \end{array}$	<p>e</p> $\begin{array}{r} 98 \\ \times 29 \\ \hline \end{array}$

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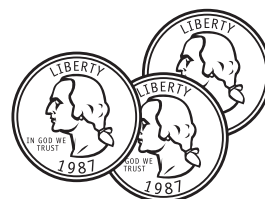
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The Soccer Tournament & the Video Arcade

1 There was a soccer tournament at the local park last summer. There were 16 teams in the tournament. There were 18 players on 10 of the teams and 17 players on the rest of the teams. How many soccer players were participating in the tournament in all? Show all your work.



2 Beth and her brother went to the arcade. It cost 75¢ to play 3 games. They played 21 games in all. How much money did they spend?



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Metric Conversions

Knowing how to multiply and divide by 10, 100, and 1,000 can help you make conversions between units in the metric system.

1 Metric Units of Length/Distance

<p>a Complete the following sentences.</p> <p>There are <u>1,000</u> millimeters in 1 meter.</p> <p>There are _____ centimeters in 1 meter.</p> <p>There are _____ meters in 1 kilometer.</p>	<p>b Use the information in part <i>a</i> to complete the equivalencies below.</p> <p><u>10</u> millimeters = 1 centimeter</p> <p>_____ centimeters = 1 kilometer</p> <p>_____ millimeters = 1 kilometer</p>
--	---

2 Metric Units of Volume/Capacity

<p>a Complete the following sentences.</p> <p>There are <u>1,000</u> milliliters in 1 liter.</p> <p>There are _____ centiliters in 1 liter.</p> <p>There are _____ liters in 1 kiloliter.</p>	<p>b Use the information in part <i>a</i> to complete the equivalencies below.</p> <p><u>3,000</u> milliliters = 3 liters</p> <p>_____ centiliters = 4 liters</p> <p>_____ liters = 7 kiloliters</p>
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3 Metric Units of Mass

<p>a Complete the following sentences.</p> <p>There are <u>1,000</u> milligrams in 1 gram.</p> <p>There are _____ centigrams in 1 gram.</p> <p>There are _____ grams in 1 kilogram.</p>	<p>b Use the information in part <i>a</i> to complete the equivalencies below.</p> <p><u>2,500</u> milligrams = 2.5 grams</p> <p>_____ centigrams = 4.5 grams</p> <p>_____ grams = 3.5 kilograms</p>
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CHALLENGE

4 Complete the following conversions.

a _____ millimeters = 1 kilometer

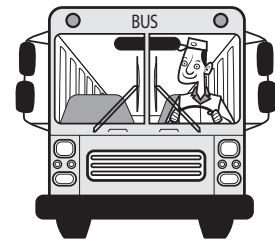
b _____ millimeters = 4.5 kilometers

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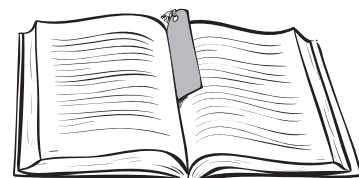
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Riding the Bus & Reading for Fun

1 Frank rides the bus to and from school every week day. His dad rides the bus to and from work every week day. The bus costs \$1.30 each way for a student and \$1.65 each way for an adult. There were 23 week days in March. How much more did Frank's dad have to pay to ride the bus in March? Show all your work.



2 Lisa's teacher says that the students in her class should spend between 20 and 45 minutes each night reading for fun even on the weekends. Whitney says she's going to read just 20 minutes each night this week. Corey says he's going to read 45 minutes each night this week. How much more time will Corey spend reading this week than Whitney? Show all your work.



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Multiplication & Division Problems

1 Fill in the missing numbers.

$$\begin{array}{r} 6 \\ \times \square \\ \hline 48 \end{array}$$

$$\begin{array}{r} 8 \\ \times \square \\ \hline 16 \end{array}$$

$$\begin{array}{r} \square \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} \square \\ \times 6 \\ \hline 54 \end{array}$$

$$\begin{array}{r} 4 \\ \times \square \\ \hline 28 \end{array}$$

$$\begin{array}{r} 5 \\ \times \square \\ \hline 45 \end{array}$$

$$\begin{array}{r} 6 \\ \times \square \\ \hline 30 \end{array}$$

$$\begin{array}{r} \square \\ \times 7 \\ \hline 49 \end{array}$$

$$\begin{array}{r} \square \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 8 \\ \times \square \\ \hline 56 \end{array}$$

2 Write an equation to answer each question below.

Question	Equation	Answer
ex How many quarters are in 75¢?	$75 \div 25 = 3$	3 quarters
a How many cartons of 12 eggs make 36 eggs altogether?		
b There are 6 cans of soda in a pack. How many packs make 42 cans?		
c There are 24 cans of soda in a case. How many cases make 72 cans?		
d There are 3 tennis balls in a can. How many cans make 27 balls?		
e Jim rides his bike at 10 miles per hour. How many hours will it take him to ride 30 miles?		

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Baking Cookies & Drying Clothes

1 Anne is baking giant cookies with her dad. They are baking them in batches of 8. If they made 36 cookies, how many batches did they have to bake? Show all your work.



2 Joe was doing his laundry at the laundromat. The dryer went for 15 minutes every time he put a quarter in it. He wanted to leave as soon as possible, so he kept checking on his clothes to see if they were dry. If his clothes were done drying in 50 minutes, how much money did Joe spend on the dryer? Show all your work.

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Carla's Market & The Animal Shelter

1 Carla is putting apples in bags to sell at her market. She has 139 apples altogether. If she wants to have the fewest possible apples left over when she is done, should she put them in bags of 4 or 5? Show all your work.

2 Jorge volunteers at the animal shelter every Saturday. His neighbor Mrs. Johnson volunteers at the animal shelter every other day. Mrs. Johnson was at the animal shelter on the first day of this month, which was a Wednesday. How many times this month will Jorge and Mrs. Johnson be at the animal shelter on the very same day? Hint: *You could sketch a calendar to help solve the problem.*

NAME _____

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Estimating Money Amounts

Fill in the circles to answer the questions below.

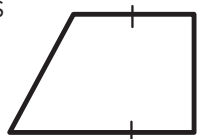

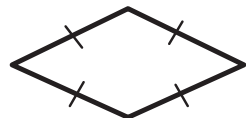
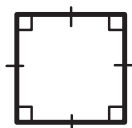
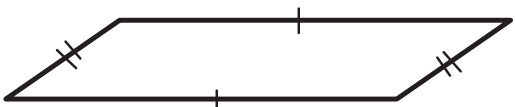
<p>1 Donny has a five-dollar bill, six quarters, and three dimes in his pocket. It would be most accurate to say that he has:</p> <p><input type="radio"/> about \$5 in his pocket</p> <p><input type="radio"/> about \$6 in his pocket</p> <p><input type="radio"/> about \$7 in his pocket</p>	<p>2 Amber has a ten-dollar bill in her pocket. She got herself a milkshake for \$3.60. She told her 2 little sisters she would buy them some ice cream too but that she cannot afford to get them each a milkshake. Is Amber right?</p> <p><input type="radio"/> She is right. She cannot afford to buy two more milkshakes.</p> <p><input type="radio"/> She is wrong. She can afford to buy two more milkshakes.</p>
<p>3 Chris wants a bike so that he can ride to and from school. The bike costs \$237. Chris's mom spends \$37.50 on his bus pass each month so that he can ride the bus to and from school. Chris told his mom that the bike would be a better deal after 5 months. (In other words, he said it would cost more to ride the bus for 5 months than to buy the bike.) Was he right?</p> <p><input type="radio"/> Chris is right. The bike will be a better deal after 5 months.</p> <p><input type="radio"/> Chris is wrong. The bike is more expensive than 5 months of bus passes.</p>	<p>4 Lisa's mom gave her a \$20 bill and asked to go to the store to get some groceries. She said that if there was any money left, she could buy a treat for herself. Here is a list of the things Lisa had to buy:</p> <ul style="list-style-type: none">• gallon of milk, \$3.50• loaf of bread, \$2.45• block of cheese, \$6.25• carton of juice, \$3.35• broccoli, \$1.50 <p>Which treat could Lisa afford to buy?</p> <p><input type="radio"/> ice cream for \$3.65</p> <p><input type="radio"/> a bag of cherries for \$2.00</p> <p><input type="radio"/> a magazine for \$4.25</p>

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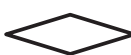


DATE _____

Classifying Quadrilaterals

A *quadrilateral* is any polygon that has 4 sides. There are many kinds of quadrilaterals, including:

<p>Trapezoid: a quadrilateral with exactly 1 pair of parallel sides</p> 	<p>Rectangle: a quadrilateral with 2 pairs of parallel sides and 4 right angles</p> 
<p>Rhombus: a quadrilateral with 4 sides that are all the same length</p> 	<p>Square: a quadrilateral with 4 right angles and 4 sides that are all the same length</p> 
<p>Parallelogram: a quadrilateral with 2 pairs of parallel sides</p> 	

1 Look carefully at the figures below. Decide how many right angles, pairs of congruent sides, and pairs of parallel sides each has. Then circle the word or words that say what kind of figure it is. You might circle more than one word for some figures.


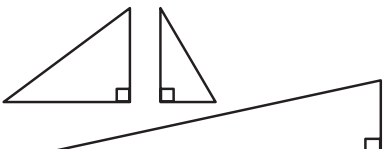
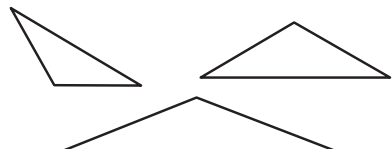
Figure	Right Angles?	Pairs of Congruent Sides?	Pairs of Parallel Sides?	Circle the word(s) that describe(s) the figure.
<p>a</p> 				trapezoid rectangle rhombus square parallelogram
<p>b</p> 				trapezoid rectangle rhombus square parallelogram
<p>c</p> 				trapezoid rectangle rhombus square parallelogram

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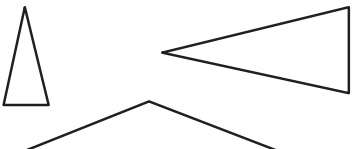
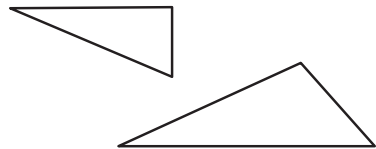
DATE _____

Classifying Triangles


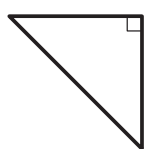
You can group triangles by the size of their angles.

<p style="text-align: center;">Acute triangles All 3 angles are acute.</p> 	<p style="text-align: center;">Right triangles 1 angle is a right angle.</p> 	<p style="text-align: center;">Obtuse triangles 1 angle is an obtuse angle.</p> 
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You can also group triangles by the lengths of their sides.

<p style="text-align: center;">Equilateral triangles All 3 sides are the same length.</p> 	<p style="text-align: center;">Isosceles triangles 2 sides are the same length.</p> 	<p style="text-align: center;">Scalene triangles No sides are the same length.</p> 
--	---	---

1 Look carefully at the triangles below and fill in the chart.

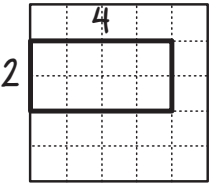
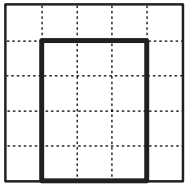
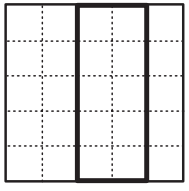
Triangle	Acute Angles?	Right Angles?	Obtuse Angles?	Congruent Sides?	What Kind? (circle as many as apply)
a 					acute equilateral right isosceles obtuse scalene
b 					acute equilateral right isosceles obtuse scalene

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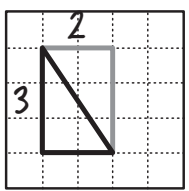
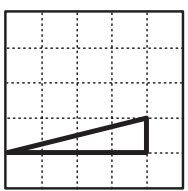
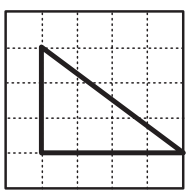
DATE _____

Finding the Areas of Rectangles, Triangles & Parallelograms

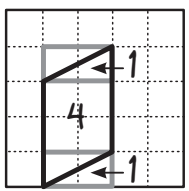
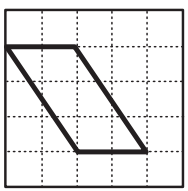
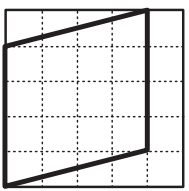
1 Find the area of each rectangle below. Each small square has an area of 1 square unit.

<p>ex</p>  <p style="text-align: center;">$2 \times 4 = 8$ 8 square units</p>	<p>a</p> 	<p>b</p> 
--	---	---

2 Find the area of each triangle below. Each small square has an area of 1 square unit.

<p>ex</p>  <p style="text-align: center;">$(3 \times 2) \div 2 = 3$ 3 square units</p>	<p>a</p> 	<p>b</p> 
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3 Find the area of each parallelogram below. Each small square has an area of 1 square unit.

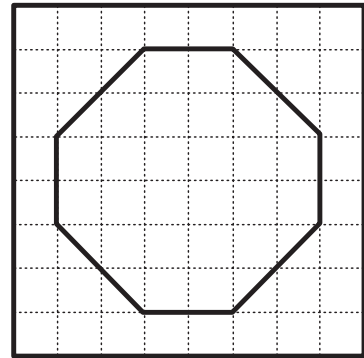
<p>ex</p>  <p style="text-align: center;">$2 \div 2 = 1$ $2 \times 2 = 4$ $1 + 1 + 4 = 6$ 6 square units</p>	<p>a</p> 	<p>b</p> 
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NAME _____

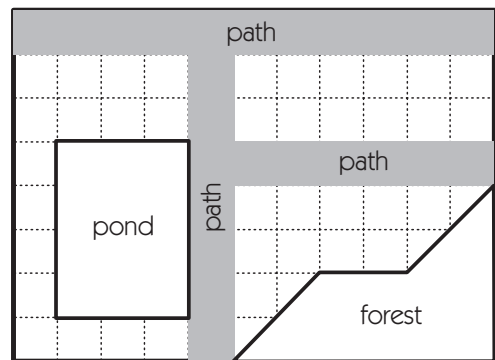
DATE _____

Area Story Problems

1 A spider spun a web shaped like this on our screen door. What area (in square units) did the web cover? Show all your work.



2 This is a map of the park near Sam's house. Any place that is not a path, the pond, or the forest is covered in grass. If each square represents 9 square yards, what area of the park is covered in grass? Show all your work.



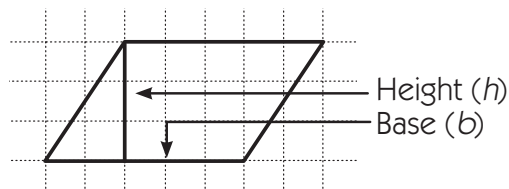
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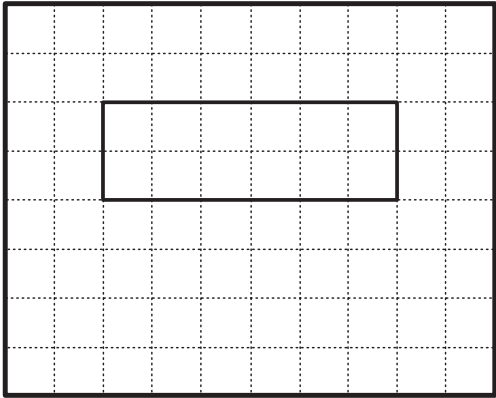
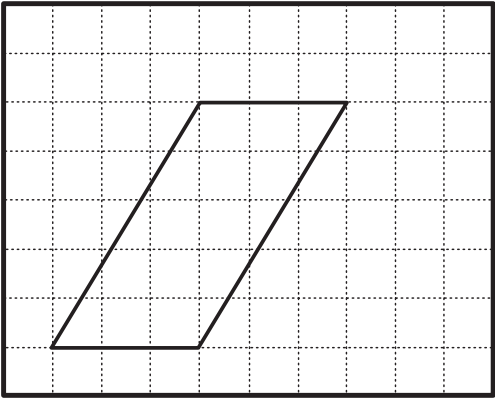
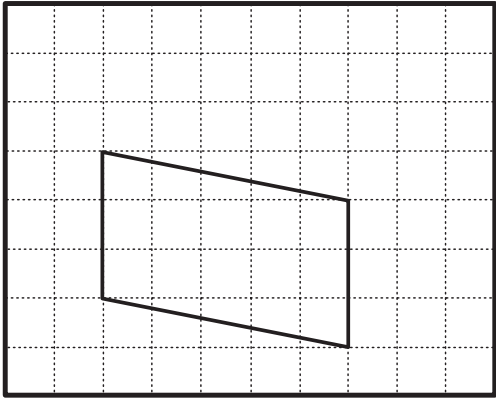
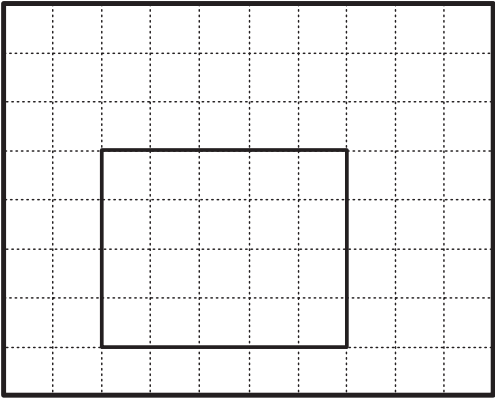
Finding the Areas of Parallelograms

To find the area of any parallelogram, including squares and rectangles, multiply the base by the height.

$$\begin{aligned} \text{Base} \times \text{Height} &= \text{Area} \\ 5 \times 3 &= 15 \text{ square units} \end{aligned}$$



1 Multiply the base by the height to find the area of these parallelograms.

<p>ex</p>  <p>Base <u> 6 </u> Height <u> 2 </u> Area <u> $6 \times 2 = 12$ square units </u></p>	<p>a</p>  <p>Base _____ Height _____ Area _____</p>
<p>b</p>  <p>Base _____ Height _____ Area _____</p>	<p>c</p>  <p>Base _____ Height _____ Area _____</p>

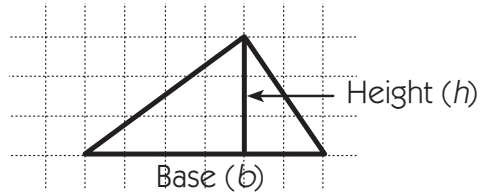
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Finding the Area of a Triangle

To find the area of any triangle, multiply the base by the height and then divide by 2.

$$\begin{aligned} (\text{Base} \times \text{Height}) \div 2 &= \text{Area} \\ (6 \times 3) \div 2 &= 9 \text{ Square Units} \end{aligned}$$



1 Label the base and height on each triangle. Then use the formula above to find the area of each one.

<p>ex</p> <p>Base <u> 6 </u> Height <u> 4 </u> Area <u> $(6 \times 4) \div 2 = 12$ square units </u></p>	<p>a</p> <p>Base _____ Height _____ Area _____</p>
<p>b</p> <p>Base _____ Height _____ Area _____</p>	<p>c</p> <p>Base _____ Height _____ Area _____</p>

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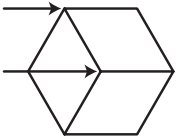
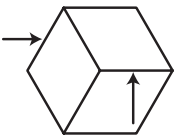
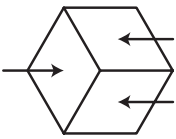
Faces, Edges & Vertices

1 Use each word one time to show what part of the cube the arrows are pointing to in each picture.


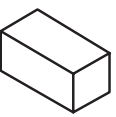
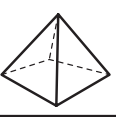

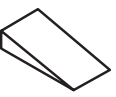


edges

faces

vertices

<p>a _____</p> 	<p>b _____</p> 	<p>c _____</p> 
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2 Fill in the table to describe and name each three-dimensional figure.

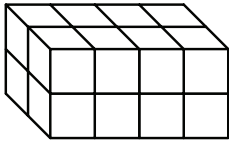
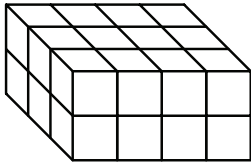
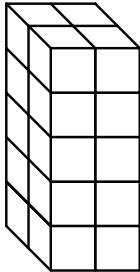
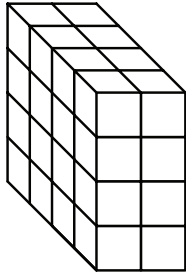
	Faces	Edges	Vertices	Shape Name
ex 	6	12	8	cube
a 				
b 				
c 				
d 				
e 				
f 				

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Surface Area & Volume

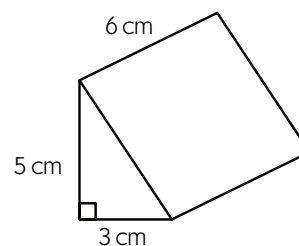
1 Each figure below is built out of centimeter cubes. Find the surface area and volume of each one.

ex		a	
			
Surface Area	Volume	Surface Area	Volume
$2 \times 2 \times 2 = 8$ $4 \times 2 \times 4 = 32$ $8 + 32 = 40 \text{ sq. cm.}$	$2 \times 2 \times 4 =$ 16 cubic cm.		
b		c	
			
Surface Area	Volume	Surface Area	Volume



CHALLENGE

2 Find the volume of this triangular prism.



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Using Basic Fact Strategies to Multiply Larger Numbers

Thinking about basic fact strategies and relationships between facts can help you multiply larger numbers too.

To multiply by	Strategy	Example
3	Double the number and add 1 more of that number.	3×16 $2 \times 16 = 32$ $32 + 16 = 48$
5	Think of the number times 10. Then cut it in half.	5×16 $10 \times 16 = 160$ $160 \div 2 = 80$
20	Think of the number times 10. Then double it.	20×16 $10 \times 16 = 160$ $160 + 160 = 320$
30	Think of the number times 10. Double it. Then add them together.	30×16 $10 \times 16 = 160$ $160 + 160 = 320$ $320 + 160 = 480$
15	Think of the number times 10. Cut it in half. Then add them together.	15×16 $10 \times 16 = 160$ $160 \div 2 = 80$ $160 + 80 = 240$

1 Complete the multiplication problems below. Use problems you have already solved to help solve other ones.

a $24 \times 1 =$ _____	b $32 \times 1 =$ _____	c $17 \times 1 =$ _____
$24 \times 2 =$ _____	$32 \times 2 =$ _____	$17 \times 2 =$ _____
$24 \times 3 =$ _____	$32 \times 3 =$ _____	$17 \times 3 =$ _____
$24 \times 10 =$ _____	$32 \times 10 =$ _____	$17 \times 10 =$ _____
$24 \times 5 =$ _____	$32 \times 5 =$ _____	$17 \times 5 =$ _____
$24 \times 20 =$ _____	$32 \times 20 =$ _____	$17 \times 20 =$ _____
$24 \times 30 =$ _____	$32 \times 30 =$ _____	$17 \times 30 =$ _____
$24 \times 15 =$ _____	$32 \times 15 =$ _____	$17 \times 15 =$ _____

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More Division Story Problems

1 A group of migrating geese travels at about 40 miles per hour. About how many hours of flying will it take them to go 320 miles? Show all your work.

2 Ellie is reading a book that is 257 pages long. If she reads 30 pages every day, how many days will it take her to read the whole book? Show all your work.



3 Paulo made some candies that he is going to sell at the market. He is putting 20 candies in a bag. If he has 187 candies altogether, how many bags can he fill? Show all your work.



CHALLENGE

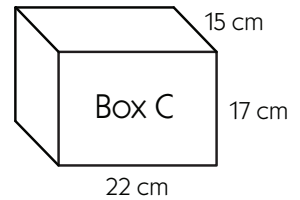
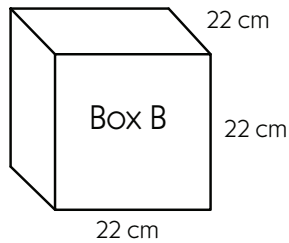
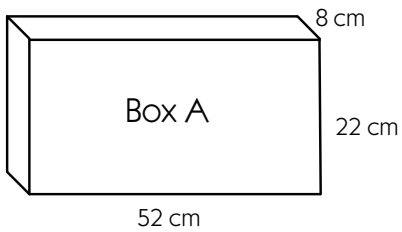
4 A group of robins took 78 days to fly 3,000 miles. On average, about how many miles did the robins fly each day? Explain why your estimate is reasonable.

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Which Box Holds the Most?

1 Ebony's cousin Jada is away at college this year. Ebony wants to send her a package with some candy in it. She has the three boxes shown below. Which box should she use if she wants to send Jada as much candy as possible?



a What do you need to know about the boxes in order to answer the question above?

b Solve the problem. Show all your work.

2 Ebony wants to wrap the box in paper before she sends it to Jada. What is the surface area of the box you chose above? Show all your work.

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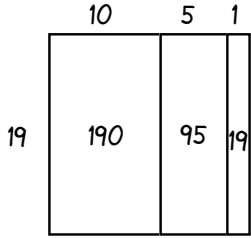
Division with Menus & Sketches

1 Fill in the multiplication menu.

a $1 \times 19 = \underline{\hspace{2cm}}$ **b** $2 \times 19 = \underline{\hspace{2cm}}$ **c** $10 \times 19 = \underline{\hspace{2cm}}$

d $5 \times 19 = \underline{\hspace{2cm}}$ **e** $20 \times 19 = \underline{\hspace{2cm}}$ **f** $15 \times 19 = \underline{\hspace{2cm}}$

2 Solve the two division problems using the menu above and sketches to help. You can add to the menu if you want to.

<p>ex $304 \div 19 = \underline{16}$</p>	<p>a $608 \div 19 = \underline{\hspace{2cm}}$</p>	<p>b $456 \div 19 = \underline{\hspace{2cm}}$</p>
<p>Computation:</p> $ \begin{array}{r} 16 \\ 19 \overline{) 304} \\ \underline{- 190} \\ 114 \\ \underline{- 95} \\ 19 \\ \underline{- 19} \\ 0 \end{array} $	<p>Computation:</p>	<p>Computation:</p>
<p>Sketch:</p> 	<p>Sketch:</p>	<p>Sketch:</p>

3 If you need to, use the divisibility rules on page 67 to help answer these.

a Are any of the numbers above (304, 608, 456) divisible by 3? If so, list them here:

b Are any of the numbers above divisible by 6? If so, list them here:

c Are any of the numbers above divisible by 9? If so, list them here:

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Money & Miles

1 Mrs. DeLuca is buying CD's for her neices and nephews. Each CD costs \$16. She has \$164 to spend. How many CD's could she buy? Show all your work.

2 Mr. Henry wants to bike 351 miles this summer. If he starts on a Monday and does a route that is 13 miles every weekday, how many weeks will it take him to bike 351 miles? Show all your work.



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Fractions & Mixed Numbers

1 Color in the strips to show the fractions named below. Each strip represents 1 whole.

ex $\frac{1}{4}$		a $\frac{3}{8}$	
b $\frac{1}{2}$		c $\frac{3}{4}$	

2 Color in the strips to show the improper fractions named below. Then write the fraction as a mixed number. Each strip represents 1 whole.

ex $\frac{7}{4}$			$1\frac{3}{4}$
a $\frac{12}{8}$			
b $\frac{3}{2}$			
c $\frac{9}{8}$			

3 Explain how you can tell whether a fraction is greater than 1 just by looking at the numerator and denominator. A fraction is greater than 1 if:



CHALLENGE

4 A certain fraction is greater than 2. The denominator is 8. What must be true about the numerator? Explain your answer.

The numerator must be greater than _____ because:




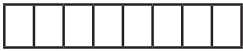


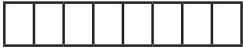


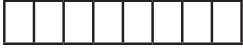
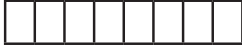

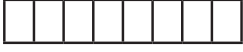


$$\frac{?}{8}$$

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Adding Fractions

1 Show the fractions on the strips. Then add them and report the sum.

First	Second	Add Them	Sum
ex $\frac{2}{4}$ 	$\frac{3}{4}$ 		$1\frac{1}{4}$
a $\frac{3}{4}$ 	$\frac{3}{4}$ 		
b $\frac{3}{8}$ 	$\frac{1}{2}$ 		
c $\frac{5}{8}$ 	$\frac{3}{4}$ 		
d $\frac{1}{2}$ 	$\frac{7}{8}$ 		

2 If you are adding two fractions that are both greater than $\frac{1}{2}$, what must be true about the sum? The sum must be:

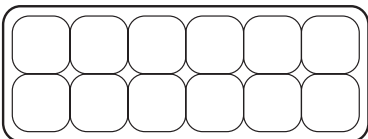
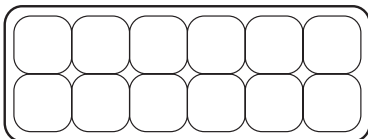
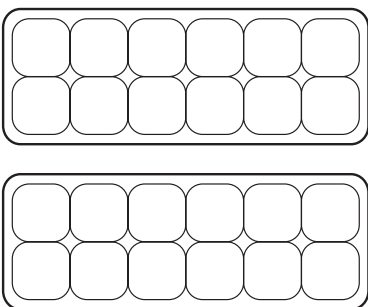
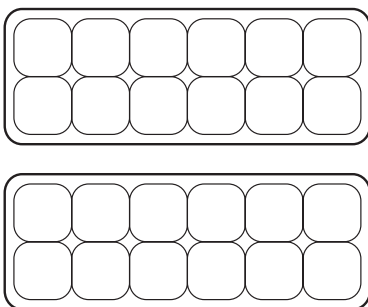
3 If you are adding two fractions that are both less than $\frac{1}{2}$, what must be true about the sum? The sum must be:

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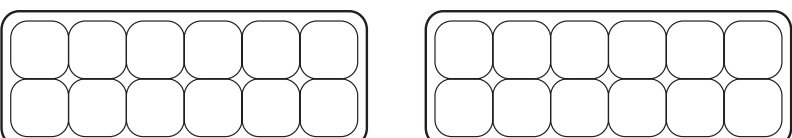
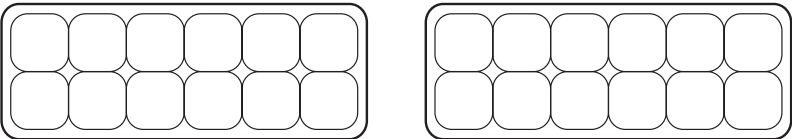
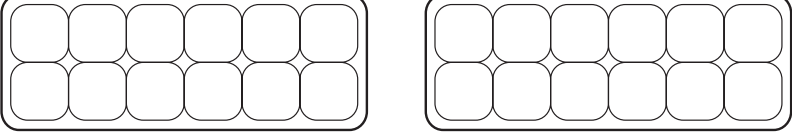
DATE _____

Egg Carton Fractions

1 Show the fractions on the egg cartons. Each carton represents 1 whole.

<p>a $\frac{1}{2}$</p> 	<p>b $\frac{3}{4}$</p> 
<p>c $1\frac{2}{3}$</p> 	<p>d $\frac{9}{6}$</p> 

2 Add the fractions below. If the sum is greater than 1, write it as a mixed number.

<p>a $\frac{5}{6} + \frac{1}{2} =$</p>	
<p>b $\frac{2}{3} + \frac{3}{6} =$</p>	
<p>c $\frac{13}{12} + \frac{3}{4} =$</p>	

3 Use a $<$, $>$, or $=$ sign to complete each number sentence.

a $\frac{6}{10} + \frac{11}{10}$ 1

b $\frac{11}{10} + \frac{7}{6}$ 2

c $\frac{1}{12} + \frac{3}{14}$ 1

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Thinking About Divisibility

It's easy to tell if a small number like 12 is divisible by another number. With bigger numbers, like 435, it can be harder to tell. Fill in the rules for knowing if a certain number is divisible by 5 or 10. Then figure out which numbers are divisible by each number.

Rule	Circle the numbers that are divisible by the number whose rule you just described.
<p>ex a Finish the rule: A number is divisible by 2 if...</p> <p>there is 0, 2, 4, 6, or 8 in the ones place.</p>	<p>b</p> <p>431 126 902 463 4,595 3,008</p>
<p>1 A number is divisible by 3 if the sum of its digits is divisible by 3.</p>	<p>a</p> <p>117 409 423 6,151 3,213</p>
<p>2a Finish the rule: A number is divisible by 5 if...</p>	<p>b</p> <p>205 452 600 2,365 7,004</p>
<p>3 A number is divisible by 6 if the sum of its digits is divisible by 3 and it is even.</p>	<p>a</p> <p>132 270 588 2,706 3,512</p>
<p>4 A number is divisible by 9 if the sum of its digits is divisible by 9.</p>	<p>a</p> <p>225 324 965 1,809 2,584</p>
<p>5a Finish the rule: A number is divisible by 10 if...</p>	<p>b</p> <p>208 700 810 2,304 8,430</p>

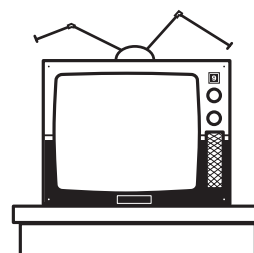
NAME _____

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Time Problems

1 Ms. Wilson wants to spend 15 minutes conferencing with each student in her class about their writing assignment. She has 30 minutes before school starts, 30 minutes after school ends, and one 45-minute study hall during the day. If she meets with students during all of those times, how many days will it take her to meet with her 30 students? Show all your work.

2 Rhonda spends half an hour watching TV each weeknight and 2 hours each day on the weekends. How much time does she spend watching TV each week? Show all your work.



3 Frank is supposed to practice his violin for at least 6 hours a week. He played for 30 minutes on Monday, for an hour on Wednesday and on Friday, and for 45 minutes on Thursday. He didn't play at all on Tuesday. How much does he need to practice this weekend to make it at least 6 hours of practicing this week? Show all your work.

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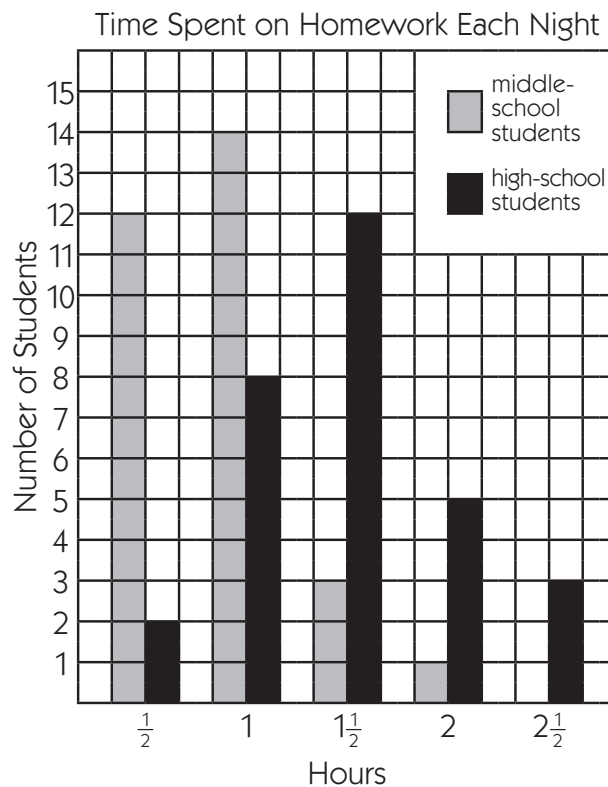
The Homework Survey

A group of teachers polled 30 middle-school and 30 high-school students to see how much time they were spending on homework each night.

1 How many middle-school students said they spent 1 hour on homework each night?

2 How many high-school students said they spent two and a half hours on homework each night?

3 How many high-school students said they spent 1 and a half hours on homework each night?



4 Overall, who spends more time on homework each night, middle-school or high-school students? Explain your answer using information from the graph above.



CHALLENGE

5 Is it easier to estimate how much time *any* middle-school student spends on homework each night or to estimate how much time *any* high-school student spends on homework each night? Explain your answer using information from the graph above.

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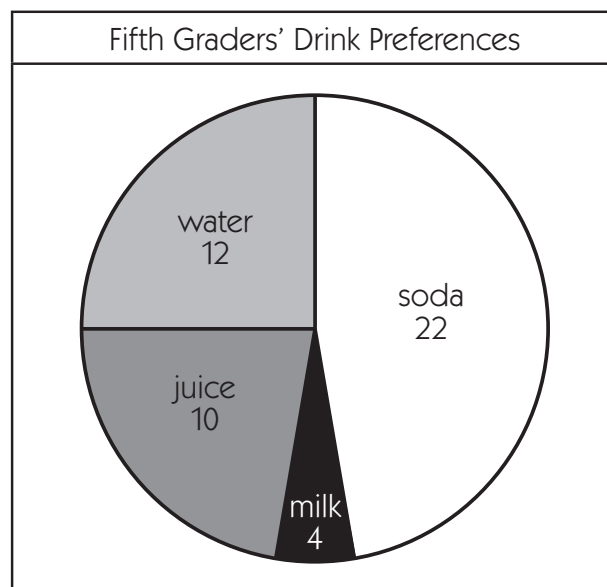
Reading & Interpreting a Circle Graph

The fifth graders were going to have a party. Their teachers wanted to see what kinds of drinks they would prefer, so they asked all 48 fifth graders what they like to drink at a party. The circle graph below shows the results.

1 Which kind of drink was the most popular?

2 Which kind of drink was the least popular?

3 Did more than half or less than half of the students prefer soda? Explain two ways you can tell by looking at the graph.



4 If the teachers decided not to serve soda, how many bottles of water, juice, and milk would you recommend they serve and why?

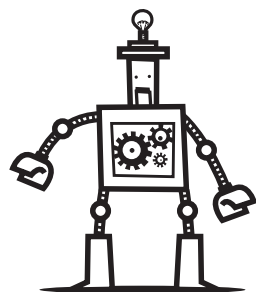
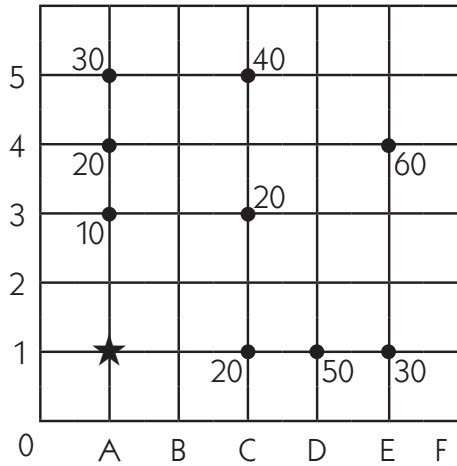
They should serve _____ bottles of water, _____ bottles of juice, and _____ cartons of milk. This is why:

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The Robot's Path

Pirate Christopher programmed a robot to collect gold pieces for him on the grid below. The numbers on the grid show how many gold pieces are at each location. The robot started at (A,1). It made just 3 turns and traveled 14 spaces before returning to its starting point with exactly 170 gold pieces. The robot *only* traveled on the horizontal and vertical grid lines.



1 If the robot makes only 3 turns and returns along the grid lines to its starting point, what shape must its path be?

2 If the robot traveled 14 spaces, what could be the dimensions of the shape you named above?

3 The robot turned at points _____, _____, and _____.

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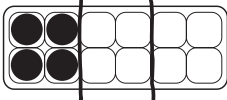
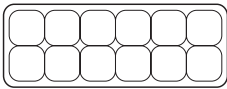
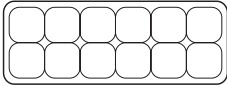
Simplifying Fractions

1 Write all the factors of each number below. Try to think of the factors in pairs.

ex 2 1, 2 **a** 4 _____ **b** 8 _____

c 3 _____ **d** 6 _____ **e** 12 _____

2 You can simplify a fraction by dividing the numerator and the denominator by the same number. If you divide the numerator and denominator by the largest factor they have in common (the greatest common factor), you can show the fraction in its simplest form. Look carefully at the example below. Then fill in the rest of the table.

Fraction	Factors of the Numerator (top number)	Factors of the Denominator (bottom number)	Greatest Common Factor	Divide to Get the Simplest Form	Picture and Equation
ex $\frac{4}{12}$	1, 2, (4)	1, 2, 3, (4), 6, 12	4	$\frac{4}{12} \div \frac{4}{4} = \frac{1}{3}$	 $\frac{4}{12} = \frac{1}{3}$
a $\frac{4}{6}$				$\frac{4}{6} \div \quad =$	 $\frac{4}{6} =$
b $\frac{3}{12}$				$\frac{3}{12} \div \quad =$	 $\frac{3}{12} =$

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Finding Equivalent Fractions

1 Write two fractions that are equal to the fraction shown.

ex $\frac{3}{9} = \frac{1}{3}$ and $\frac{3}{9} = \frac{6}{18}$	a $\frac{9}{15} =$ and $\frac{9}{15} =$
b $\frac{4}{6} =$ and $\frac{4}{6} =$	c $\frac{15}{18} =$ and $\frac{15}{18} =$

2 Circle the fractions that are equal to the fraction shown. Use the space at right as a work space to do calculations if needed.

Fraction	Circle the fractions that are equal to the other fraction.
ex $\frac{1}{2}$	$\frac{4}{8}$ $\frac{3}{5}$ $\frac{2}{4}$ $\frac{7}{14}$ $\frac{5}{6}$
a $\frac{4}{12}$	$\frac{1}{3}$ $\frac{2}{10}$ $\frac{8}{24}$ $\frac{6}{14}$ $\frac{12}{36}$
b $\frac{3}{4}$	$\frac{6}{7}$ $\frac{6}{8}$ $\frac{9}{12}$ $\frac{15}{20}$ $\frac{30}{40}$
c $\frac{3}{15}$	$\frac{6}{30}$ $\frac{5}{17}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{9}{45}$

3 If you are given one fraction, what can you do to write other fractions that are equal to that fraction?

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Rewriting & Comparing More Fractions

1 Find the least common multiple of each pair of numbers.

<p>ex The least common multiple of 8 and 28 is <u>56</u>.</p> <p>multiples of 28: 28, <u>56</u></p> <p>multiples of 8: 8, 16, 24, 32, 40, 48, <u>56</u></p>	<p>a The least common multiple of 6 and 7 is _____.</p> <p>multiples of 6:</p> <p>multiples of 7:</p>
<p>b The least common multiple of 9 and 12 is _____.</p> <p>multiples of 9:</p> <p>multiples of 12:</p>	<p>c The least common multiple of 9 and 15 is _____.</p> <p>multiples of 9:</p> <p>multiples of 15:</p>

2 Rewrite each pair of fractions with a common denominator. Then use a $<$, $>$, or $=$ to compare them in two number sentences.

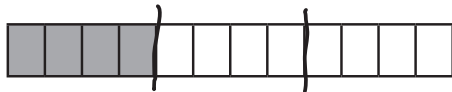





Fractions	Rewritten with Common Denominator	Number Sentences
<p>ex</p> <p>$\frac{6}{8}$ and $\frac{17}{28}$</p>	<p>$\frac{6}{8} \times \frac{7}{7} = \frac{42}{56}$ $\frac{17}{28} \times \frac{2}{2} = \frac{34}{56}$</p>	<p>$\frac{42}{56} > \frac{34}{56}$ so $\frac{6}{8} > \frac{17}{28}$</p>
<p>a</p> <p>$\frac{4}{6}$ and $\frac{5}{7}$</p>	<p>$\frac{4}{6} \times \frac{\quad}{\quad} =$ $\frac{5}{7} \times \frac{\quad}{\quad} =$</p>	<p>so $\frac{4}{6}$ $\frac{5}{7}$</p>
<p>b</p> <p>$\frac{7}{9}$ and $\frac{9}{12}$</p>	<p>$\frac{7}{9} \times \frac{\quad}{\quad} =$ $\frac{9}{12} \times \frac{\quad}{\quad} =$</p>	<p>so $\frac{7}{9}$ $\frac{9}{12}$</p>
<p>c</p> <p>$\frac{8}{9}$ and $\frac{13}{15}$</p>	<p>$\frac{8}{9} \times \frac{\quad}{\quad} =$ $\frac{13}{15} \times \frac{\quad}{\quad} =$</p>	<p>so $\frac{8}{9}$ $\frac{13}{15}$</p>

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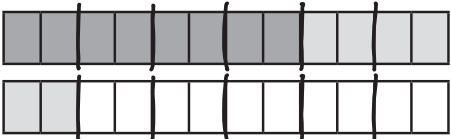

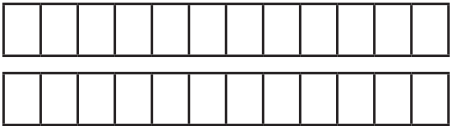
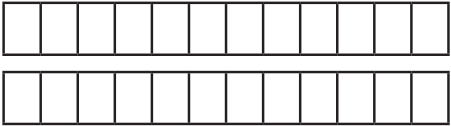
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Adding Fractions

1 Each bar below is divided into 12 equal pieces. Show each fraction on a fraction bar.

<p>ex</p> $\frac{1}{3}$ 	<p>a</p> $\frac{2}{3}$ 
<p>b</p> $\frac{1}{4}$ 	<p>c</p> $\frac{3}{4}$ 
<p>d</p> $\frac{1}{2}$ 	<p>e</p> $\frac{5}{6}$ 

2 Rewrite each pair of fractions so that they have the same denominator. Then use the fraction bar pictures to show their sum. Write an equation to show both fractions and their sum.

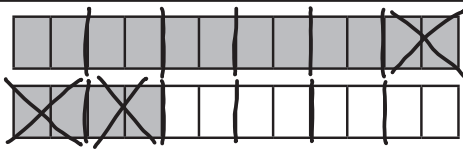

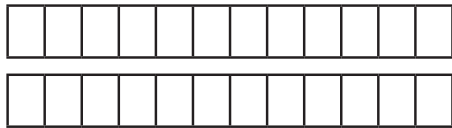
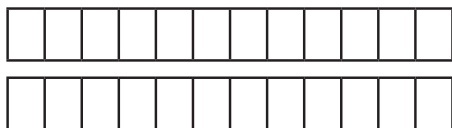
Fractions to Add	Rewrite with Common Denominator	Picture and Equation
<p>ex</p> $\frac{2}{3} + \frac{1}{2}$	$\frac{2}{3} + \frac{1}{2} = \frac{4}{6} + \frac{3}{6}$	 $\frac{4}{6} + \frac{3}{6} = \frac{7}{6} \text{ or } 1\frac{1}{6}$
<p>a</p> $\frac{2}{3} + \frac{3}{4}$	$\frac{2}{3} + \frac{3}{4} =$	
<p>b</p> $\frac{1}{3} + \frac{5}{6}$	$\frac{1}{3} + \frac{5}{6} =$	
<p>c</p> $\frac{7}{12} + \frac{3}{4}$	$\frac{7}{12} + \frac{3}{4} =$	

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Fraction Subtraction

1 Rewrite each pair of fractions so they have the same denominator. Then use the fraction bar pictures to show their difference. Write an equation to show both fractions and their difference.

Fractions	Rewrite with Common Denominator	Picture and Equation
<p>ex</p> $\frac{4}{3} - \frac{1}{2}$	$\frac{4}{3} - \frac{1}{2} = \frac{8}{6} - \frac{3}{6}$	 $\frac{8}{6} - \frac{3}{6} = \frac{5}{6}$
<p>a</p> $\frac{3}{4} - \frac{2}{3}$	$\frac{3}{4} - \frac{2}{3} =$	
<p>b</p> $\frac{5}{6} - \frac{1}{3}$	$\frac{5}{6} - \frac{1}{3} =$	
<p>c</p> $\frac{15}{12} - \frac{3}{4}$	$\frac{15}{12} - \frac{3}{4} =$	



CHALLENGE

2 Add each pair of numbers.

a $\frac{4}{12} + \frac{7}{15} =$

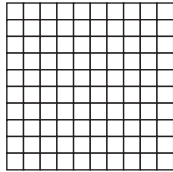
b $463\frac{7}{12} + 129\frac{13}{36} =$

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Modeling Decimals

The base ten models below can be used to represent decimal numbers.



1 whole



1 tenth



1 hundredth



1 thousandth

1 Write the number that each model represents.

Model	Decimal Number
<p>ex</p>	<p>1.025</p>
<p>a</p>	
<p>b</p>	
<p>c</p>	

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Adding & Subtracting Decimals

1 Complete the following addition problems.

$$\begin{array}{r} 3.034 \\ + 1.886 \\ \hline 4.920 \end{array}$$

$$\begin{array}{r} 4.067 \\ + 3.290 \\ \hline \end{array}$$

$$\begin{array}{r} 1.437 \\ + 1.042 \\ \hline \end{array}$$

$$\begin{array}{r} 7.63 \\ + 4.592 \\ \hline \end{array}$$

$$\begin{array}{r} 4.803 \\ + 1.420 \\ \hline \end{array}$$

$2.45 + 1.469 = \underline{\hspace{2cm}}$

$3.043 + 1.588 = \underline{\hspace{2cm}}$

2 Complete the following subtraction problems.

$$\begin{array}{r} 3.046 \\ - 1.273 \\ \hline 1.773 \end{array}$$

$$\begin{array}{r} 2.405 \\ - 0.512 \\ \hline \end{array}$$

$$\begin{array}{r} 3.437 \\ - 2.106 \\ \hline \end{array}$$

$$\begin{array}{r} 5.26 \\ - 3.40 \\ \hline \end{array}$$

$$\begin{array}{r} 4.513 \\ - 1.382 \\ \hline \end{array}$$

$5.604 - 3.025 = \underline{\hspace{2cm}}$

$6.045 - 2.039 = \underline{\hspace{2cm}}$

3 Circle the pairs of numbers whose sums are greater than 2.

$1.26 + 0.773$

$1.255 + 0.094$

$1.53 + 0.458$

$1.502 + 0.6$

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Decimal Addition & Subtraction

1 Fill in the missing digits below to make the inequalities true. There will be more than one correct way to fill in each missing digit.

ex $3 < 1.\underline{5}06 + 1.5$	a $0.705 + 1.\underline{\quad}98 < 2$
b $4 < 2.406 + 1.\underline{\quad}09$	c $1.620 + 1.\underline{\quad}82 > 3$

2 Complete the following addition problems.

$$\begin{array}{r} ^1 ^1 \\ 3.034 \\ + 1.886 \\ \hline 4.920 \end{array}$$

$$\begin{array}{r} 12.32 \\ + 4.099 \\ \hline \end{array}$$

$$\begin{array}{r} 6.005 \\ + 12.243 \\ \hline \end{array}$$

$$\begin{array}{r} 17.28 \\ + 3.8 \\ \hline \end{array}$$

$$\begin{array}{r} 7.853 \\ + 3.629 \\ \hline \end{array}$$

$3.45 + 5.062 = \underline{\hspace{2cm}}$

$8.049 + 4.356 = \underline{\hspace{2cm}}$

3 Complete the following subtraction problems.

$$\begin{array}{r} ^2 ^9 \\ 3.046 \\ - 1.273 \\ \hline 1.773 \end{array}$$

$$\begin{array}{r} 5.38 \\ - 2.4 \\ \hline \end{array}$$

$$\begin{array}{r} 4.263 \\ - 2.051 \\ \hline \end{array}$$

$$\begin{array}{r} 8.03 \\ - 3.485 \\ \hline \end{array}$$

$$\begin{array}{r} 12.238 \\ - 9.065 \\ \hline \end{array}$$

$15.204 - 8.039 = \underline{\hspace{2cm}}$

$13.006 - 12.058 = \underline{\hspace{2cm}}$

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Decimal Story Problems

1a In the 2008 Beijing Summer Olympics, Jamaican runner Usain Bolt ran the 200 meter dash in 19.30 seconds, coming in first place and breaking the world record for that race. The runner who came in second, Churandy Martina, finished the race in 19.82 seconds. By how much did Bolt win the race? Show all your work.

b Did Bolt run the race more or less than a half-second faster than the second place finisher? Explain how you can tell.

2a In the 2008 Beijing Summer Olympics, Usain Bolt ran the 100-meter dash in 9.69 seconds. Is that less than half, exactly half, or more than half as long as it took him to run the 200-meter dash? Show all your work.

b Does your answer to part 2a make sense to you? Explain why or why not.

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Fraction Estimate & Check

Before you solve each problem, look carefully at the fractions and write what you know about the sum or difference. Then find the exact sum or difference. Show all your work. If your answer is greater than 1, write it as a mixed number, not an improper fraction.

Problem	What You Know Before You Start	Show your work.	Exact Sum or Difference
ex $\frac{8}{3} + \frac{9}{12}$	The sum is more than 3.	$\frac{32}{12} + \frac{9}{12} = \frac{41}{12}$ and $\frac{41}{12} = 3\frac{5}{12}$	$3\frac{5}{12}$
1 $\frac{4}{6} + \frac{8}{12}$			
2 $\frac{12}{8} + \frac{3}{4}$			
3 $\frac{3}{8} + \frac{8}{12}$			
4 $\frac{10}{8} - \frac{9}{12}$			
5 $\frac{5}{6} - \frac{3}{4}$			

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Lauren's Puppy

1a Lauren's puppy wasn't feeling well so she took him to the vet. The puppy weighed $4\frac{3}{4}$ pounds. The vet said she would like the puppy to gain at least $\frac{9}{16}$ of a pound by the time they came back for his checkup. When they returned for the puppy's checkup, he had gained $\frac{3}{4}$ of a pound. How much more weight did the puppy gain than he needed to? Show all your work.

b How much did the puppy weigh after he had gained $\frac{3}{4}$ of a pound? Show all your work.

2 Lauren was happy that her puppy was gaining weight, so she told her friend Andre how much the puppy weighed now. Andre had a tiny chihuahua puppy, and he said, "Wow, your puppy is a pound and a half heavier than mine!" How much does Andre's puppy weigh? Show all your work.

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Order of Operations Review

The order of operations tells you how to do calculations when there is more than one kind of operation.

Order of Operations	Example
	$20 - 12 \div (3 + 1)$
1. Anything inside parentheses	$20 - 12 \div (3 + 1) = 20 - 12 \div 4$
2. Multiplication and division from left to right	$20 - 12 \div 4 = 20 - 3$
3. Addition and subtraction from left to right	$20 - 3 = 17$

1 Use the order of operations above to complete each equation. Show all your work.

a _____ = $463 - 180 \div (3 \times (2 + 3))$	b $(249 - 192) \div 3 \times 14 =$ _____
c _____ = $36 + 14 \times (182 - 164) \div 12$	d $(9 \div 3 + 213) - 72 \div 4 =$ _____

2 Insert parentheses to make each equation true. Show all your work.

a $3 \times 9 + 18 + 36 \div 9 = 33$	b $2 = 140 \div 2 + 12 - 4 \times 2$
---	---

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Reviewing Three Number Properties

If you are adding or multiplying, you can change the order of the numbers or the way they are grouped to make the calculations easier. The three properties below can make mental math easier.

Commutative Property	Associative Property	Distributive Property
Changing the order of two numbers or numerical expressions when you add or multiply does not change the answer.	Changing the way you group three numbers or numerical expressions when you add or multiply does not change the answer.	You can break a number apart, multiply each part separately, and then add the products. You will still get the same answer.
$5 + 2 = 2 + 5$ $5 \times 2 = 2 \times 5$	$(38 \times 4) \times 25 = 38 \times (4 \times 25)$ $= 38 \times 100$ $= 3,800$	$6 \times 13 = 6 \times (10 + 3)$ $= 6 \times 10 + 6 \times 3$ $= 60 + 18$ $= 78$

1 For each problem below:

- Write it a different way so it is easier to solve in your head.
- Solve it and write the answer.
- Circle C if you switched the order of the numbers.
- Circle A if you grouped the numbers in a different way.
- Circle D if you broke the number apart and multiplied one part at a time.
- You may need to circle more than one property.

Problem	Rewrite	Answer	Property
ex $(70 + 469) + 30$	$(70 + 30) + 469$	569	<input checked="" type="checkbox"/> C <input checked="" type="checkbox"/> A <input type="checkbox"/> D
a 12×23			<input type="checkbox"/> C <input type="checkbox"/> A <input type="checkbox"/> D
b $(50 \times 73) \times 2$			<input type="checkbox"/> C <input type="checkbox"/> A <input type="checkbox"/> D
c $15 + (135 + 86)$			<input type="checkbox"/> C <input type="checkbox"/> A <input type="checkbox"/> D
d 35×8			<input type="checkbox"/> C <input type="checkbox"/> A <input type="checkbox"/> D
e $25 \times (4 \times 329)$			<input type="checkbox"/> C <input type="checkbox"/> A <input type="checkbox"/> D
f $(34 \times 50) \times 20$			<input type="checkbox"/> C <input type="checkbox"/> A <input type="checkbox"/> D

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Finding Patterns & Solving Problems

1 Find a pattern and use it to fill in the next 3 numbers in each sequence below. Then explain how you did it.

ex	4	7	10	13	16	<u>19</u>	<u>22</u>	<u>25</u>
		+ 3	+ 3	+ 3	+ 3	+ 3	+ 3	+ 3
Explanation: I added 3 more each time.								
a	1	10	19	28	37	_____	_____	_____
Explanation:								
b	197	186	175	164	153	_____	_____	_____
Explanation:								
c	1	3	9	27	81	_____	_____	_____
Explanation:								
d	1	2	4	8	16	_____	_____	_____
Explanation:								



CHALLENGE

2 Look at the example from problem 1:

4, 7, 10, 13, 16, 19, 22, 25 ...

- a** What would be the 30th number in the sequence? Show all your work.
- b** What would be the 100th number in the sequence? Show all your work.
- c** Would the 876th number in the sequence be odd or even? Explain how you can tell.

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Variables & Expressions

Sometimes people use letters to represent unspecified amounts. Such letters are called *variables*. For example, if you worked for \$6 an hour, you would multiply the time you worked by 6 to find out what you earned. If we let t represent the time you worked, we could show the amount of money you earned with this expression.

$$6 \times t$$

When we say, “evaluate the expression when $t = 3$,” we mean, “figure out how much money you would make if you worked for 3 hours.” To do this, substitute 3 for t and complete the calculation:

Evaluate the expression $6 \times t$ when $t = 3$.

$6 \times 3 = 18$ This means you would earn \$18 if you worked for 3 hours at \$6 per hour.

1 Evaluate the expression $6 \times t$ when:

a $t = 2$

b $t = 4$

c $t = 5$

d $t = 8$

2 How much money would you make if you worked 15 hours and earned \$6 per hour?

3 Evaluate the following expressions when each variable has the value shown. Use order of operations when you need to.

ex $4 + b$ when $b = 10$
 $4 + 10 = 14$

a $4 + b$ when $b = 23$

b $4 + b$ when $b = 103$

c $3 \times n - 2$ when $n = 2$

d $3 \times n - 2$ when $n = 4$

e $2 \times k + 12$ when $k = 7$

f $2 \times k + 12$ when $k = 10$

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Cheetahs & Muffins

1a Isabel works at the city zoo. She is in charge of feeding the cheetahs. Each cheetah needs to eat 5 pounds of food each day. Which expression shows how much food the cheetahs will eat altogether each day? (The letter c stands for the number of cheetahs at the zoo.)

$5 + c$

$c - 5$

$5 \times c$

$c \div 5$

b There are 6 cheetahs at the zoo now. How much food do they eat each day? Show all your work.

c The zoo is thinking about getting some more cheetahs. Isabel can afford to buy 70 pounds of food each day. How many cheetahs would that feed? Show all your work.

2a Every weekend Clarice and her dad bake some muffins and give 8 of them to their neighbors for breakfast on Sunday. Which expression shows how many muffins they have left over for themselves each week? (The letter m stands for the number of muffins they baked.)

$8 + m$

$m - 8$

$8 \times m$

$m \div 8$

b If they baked 24 muffins last weekend, how many did they have left for themselves? Show all your work.

c If they wanted to have 12 muffins left for themselves, how many would they need to bake? Show all your work.



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Adding Fractions with Different Denominators

Here is a quick way to add fractions with different denominators.

Original Problem	$\frac{3}{4} + \frac{5}{6}$
1. Multiply the denominators by each other to get a common denominator.	$4 \times 6 = 24$
2. Rewrite each fraction as an equivalent fraction with the common denominator.	$\frac{3}{4} \times \frac{6}{6} = \frac{18}{24}$ $\frac{5}{6} \times \frac{4}{4} = \frac{20}{24}$
3. Add the fractions.	$\frac{18}{24} + \frac{20}{24} = \frac{38}{24}$
4. Reduce the sum to lowest form and express as a mixed number if greater than 1.	$38 - 24 = 14$ $\frac{38}{24} = \frac{14}{24}$ $\frac{14}{24} = 1\frac{7}{12}$

1 Follow the steps at left to add each pair of fractions.

a

$$\frac{1}{6} + \frac{7}{9}$$

b

$$\frac{5}{8} + \frac{11}{12}$$

c

$$\frac{3}{5} + \frac{4}{11}$$

d

$$\frac{10}{16} + \frac{5}{9}$$

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Subtracting Fractions with Different Denominators

Here is a quick way to subtract fractions with different denominators.

Original Problem	$\frac{5}{6} - \frac{3}{4}$
1. Multiply the denominators by each other to get a common denominator.	$6 \times 4 = 24$
2. Rewrite each fraction as an equivalent fraction with the common denominator.	$\frac{5}{6} \times \frac{4}{4} = \frac{20}{24}$ $\frac{3}{4} \times \frac{6}{6} = \frac{18}{24}$
3. Subtract the smaller fraction from the larger fraction.	$\frac{20}{24} - \frac{18}{24} = \frac{2}{24}$
4. Reduce the difference to lowest form and express as a mixed number if greater than 1.	$\frac{2}{24} = \frac{1}{12}$

1 Follow the steps at left to find the difference between each pair of fractions.

a

$$\frac{4}{5} - \frac{2}{7}$$

b

$$\frac{2}{3} - \frac{3}{5}$$

c

$$\frac{5}{6} - \frac{1}{4}$$

d

$$\frac{8}{13} - \frac{3}{8}$$

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Fraction Addition & Subtraction Review

1 Find the sum or the difference for each pair of fractions.

a $\frac{5}{6} - \frac{2}{5} =$

b $\frac{1}{3} + \frac{6}{7} =$

2 Annie ran $\frac{5}{8}$ of a mile. Her sister Mabel ran $\frac{7}{10}$ of a mile. Who ran farther and by exactly how much? Show all of your work.

3 Juan and his mom hiked $\frac{3}{8}$ of a mile this morning and $\frac{4}{5}$ of a mile this afternoon. How much did they hike today? Show all of your work.

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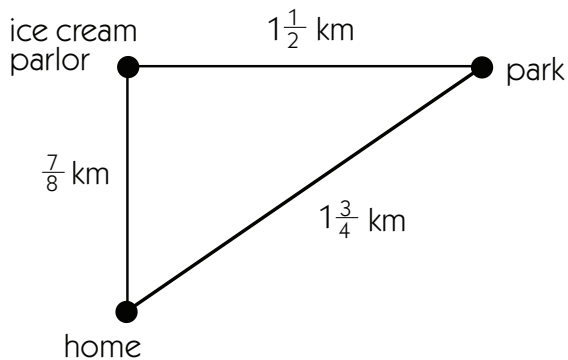
DATE _____

More Fraction Problems

1 Fill in the missing fraction or mixed number in each equation.

ex $1\frac{3}{4} + \frac{1}{4} = 2$	a $1 = \frac{6}{10} + \underline{\hspace{2cm}}$	b $2 = 1\frac{4}{12} + \underline{\hspace{2cm}}$
c $3 = \underline{\hspace{2cm}} + 1\frac{7}{8}$	d $2 = \frac{10}{12} + \underline{\hspace{2cm}}$	e $2\frac{6}{8} + \underline{\hspace{2cm}} = 4$

2 Calvin and his family were going on a walk. They wanted to walk to the park, then go to the ice cream parlor, and finally walk home. The map below shows their path and the distances between each stop. How many kilometers will they walk in all? Show all your work.



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Decimal Addition & Subtraction Review

1 Fill in the missing digit so that each sum is *greater* than 1. In some cases, there will be more than one correct answer.

ex $0.106 + 0.\underline{9}02$	a $0.512 + 0.4\underline{\quad}6$
b $0.920 + 0.\underline{\quad}98$	c $0.386 + 0.61\underline{\quad}$

2 Complete the following addition problems.

$$\begin{array}{r} 3.0\overset{11}{3}4 \\ + 1.886 \\ \hline 4.920 \end{array}$$

$$\begin{array}{r} 2.006 \\ + 7.989 \\ \hline \end{array}$$

$$\begin{array}{r} 3.080 \\ + 14.513 \\ \hline \end{array}$$

$$\begin{array}{r} 24.38 \\ + 5.9 \\ \hline \end{array}$$

$$\begin{array}{r} 7.608 \\ + 2.600 \\ \hline \end{array}$$

$3.27 + 5.049 = \underline{\hspace{2cm}}$

$4.438 + 1.96 = \underline{\hspace{2cm}}$

3 Complete the following subtraction problems.

$$\begin{array}{r} 3.046 \\ - 1.273 \\ \hline 1.773 \end{array}$$

$$\begin{array}{r} 3.675 \\ - 0.947 \\ \hline \end{array}$$

$$\begin{array}{r} 4.438 \\ - 2.210 \\ \hline \end{array}$$

$$\begin{array}{r} 10.17 \\ - 8.99 \\ \hline \end{array}$$

$$\begin{array}{r} 13.154 \\ - 8.083 \\ \hline \end{array}$$

$9.056 - 5.27 = \underline{\hspace{2cm}}$

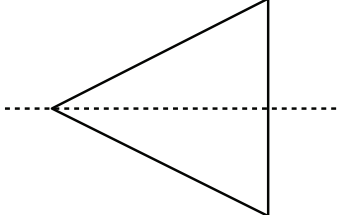

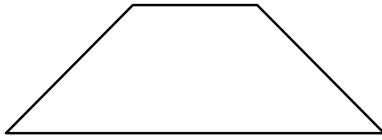

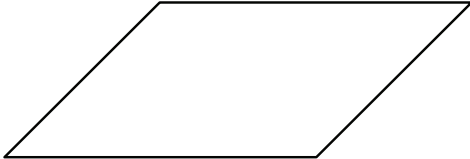
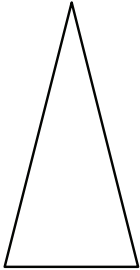
$27.003 - 26.09 = \underline{\hspace{2cm}}$

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Drawing Lines of Symmetry

Draw all the lines of symmetry in each figure. There may be 1 line of symmetry, more than 1 line of symmetry, or no lines of symmetry.

<p>ex</p>  <p>This figure has <u> 1 </u> line(s) of symmetry.</p>	<p>1</p>  <p>This figure has <u> </u> line(s) of symmetry.</p>
<p>2</p>  <p>This figure has <u> </u> line(s) of symmetry.</p>	<p>3</p>  <p>This figure has <u> </u> line(s) of symmetry.</p>
<p>4</p>  <p>This figure has <u> </u> line(s) of symmetry.</p>	<p>5</p>  <p>This figure has <u> </u> line(s) of symmetry.</p>

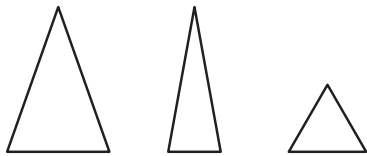
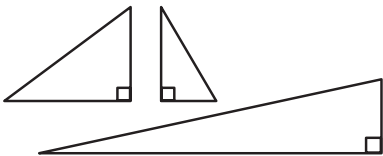
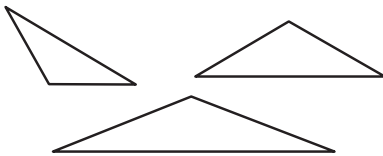
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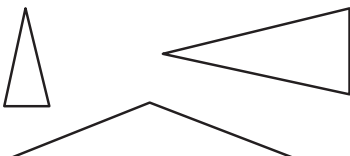
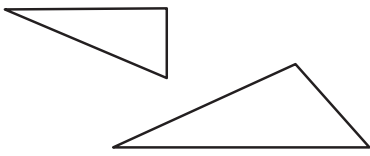
Classifying Triangles Review

Use the following information to solve the problems below.

- You can group triangles by the size of their angles

<p>Acute triangles All 3 angles are acute.</p> 	<p>Right triangles 1 angle is a right angle.</p> 	<p>Obtuse triangles 1 angle is an obtuse angle.</p> 
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- You can also group triangles by the lengths of their sides

<p>Equilateral triangles All 3 sides are the same length.</p> 	<p>Isosceles triangles 2 sides are the same length.</p> 	<p>Scalene triangles No sides are the same length.</p> 
--	--	---

1 Think carefully about each kind of triangle and draw them if you like. What is the greatest possible number of lines of symmetry each kind of triangle below can have? Explain your answer with words and/or sketches.

<p>a Acute triangles can have no more than _____ lines of symmetry.</p>	<p>Why?</p>
<p>b Right triangles can have no more than _____ lines of symmetry.</p>	<p>Why?</p>
<p>c Obtuse triangles can have no more than _____ lines of symmetry.</p>	<p>Why?</p>

Summer Work Packet



Math - Fluency Practice
Multiplication

Name:	Date:
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Multiply by 2



Write out the partial products then add them in your head.

To multiply 2 times a double-digit number, break the number into two parts. Multiply 2 times the first part then 2 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 2 \times 17 &= (2 \times 10) + (2 \times 7) \\
 &= 20 + 14 \\
 &= 34
 \end{aligned}$$

	Think Smart		Think Quick
1.	2×15	$(2 \times 10) + (2 \times 5) = \square + \square$	$2 \times 15 = \square$
2.	2×14	$(2 \times 10) + (2 \times 4) = \square + \square$	$2 \times 14 = \square$
3.	2×11	$(2 \times 10) + (2 \times 1) = \square + \square$	$2 \times 11 = \square$
4.	2×13	$(2 \times 10) + (2 \times 3) = \square + \square$	$2 \times 13 = \square$
5.	2×12	$(2 \times 10) + (2 \times 2) = \square + \square$	$2 \times 12 = \square$
6.	2×18	$(2 \times 10) + (2 \times 8) = \square + \square$	$2 \times 18 = \square$
7.	2×16	$(2 \times 10) + (2 \times 6) = \square + \square$	$2 \times 16 = \square$
8.	2×19	$(2 \times 10) + (2 \times 9) = \square + \square$	$2 \times 19 = \square$
9.	2×17	$(2 \times 10) + (2 \times 7) = \square + \square$	$2 \times 17 = \square$
10.	2×20	$(2 \times 10) + (2 \times 10) = \square + \square$	$2 \times 20 = \square$

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Multiply by 3



Write out the partial products then add them in your head.

To multiply 3 times a double-digit number, break the number into two parts. Multiply 3 times the first part then 3 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 3 \times 17 &= (3 \times 10) + (3 \times 7) \\
 &= 30 + 21 \\
 &= 51
 \end{aligned}$$

		Think Smart	Think Quick
1.	3×15	$(3 \times 10) + (3 \times 5) = \square + \square$	$3 \times 15 = \square$
2.	3×14	$(3 \times 10) + (3 \times 4) = \square + \square$	$3 \times 14 = \square$
3.	3×11	$(3 \times 10) + (3 \times 1) = \square + \square$	$3 \times 11 = \square$
4.	3×13	$(3 \times 10) + (3 \times 3) = \square + \square$	$3 \times 13 = \square$
5.	3×12	$(3 \times 10) + (3 \times 2) = \square + \square$	$3 \times 12 = \square$
6.	3×18	$(3 \times 10) + (3 \times 8) = \square + \square$	$3 \times 18 = \square$
7.	3×16	$(3 \times 10) + (3 \times 6) = \square + \square$	$3 \times 16 = \square$
8.	3×19	$(3 \times 10) + (3 \times 9) = \square + \square$	$3 \times 19 = \square$
9.	3×17	$(3 \times 10) + (3 \times 7) = \square + \square$	$3 \times 17 = \square$
10.	3×20	$(3 \times 10) + (3 \times 10) = \square + \square$	$3 \times 20 = \square$

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Multiply by 4



Write out the partial products then add them in your head.

To multiply 4 times a double-digit number, break the number into two parts. Multiply 4 times the first part then 4 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 4 \times 17 &= (4 \times 10) + (4 \times 7) \\
 &= 40 + 28 \\
 &= 68
 \end{aligned}$$

	Think Smart		Think Quick
1.	4×15	$(4 \times 10) + (4 \times 5) = \square + \square$	$4 \times 15 = \square$
2.	4×14	$(4 \times 10) + (4 \times 4) = \square + \square$	$4 \times 14 = \square$
3.	4×11	$(4 \times 10) + (4 \times 1) = \square + \square$	$4 \times 11 = \square$
4.	4×13	$(4 \times 10) + (4 \times 3) = \square + \square$	$4 \times 13 = \square$
5.	4×12	$(4 \times 10) + (4 \times 2) = \square + \square$	$4 \times 12 = \square$
6.	4×18	$(4 \times 10) + (4 \times 8) = \square + \square$	$4 \times 18 = \square$
7.	4×16	$(4 \times 10) + (4 \times 6) = \square + \square$	$4 \times 16 = \square$
8.	4×19	$(4 \times 10) + (4 \times 9) = \square + \square$	$4 \times 19 = \square$
9.	4×17	$(4 \times 10) + (4 \times 7) = \square + \square$	$4 \times 17 = \square$
10.	4×20	$(4 \times 10) + (4 \times 10) = \square + \square$	$4 \times 20 = \square$

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Multiply by 5



Write out the partial products then add them in your head.

To multiply 5 times a double-digit number, break the number into two parts. Multiply 5 times the first part then 5 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 5 \times 17 &= (5 \times 10) + (5 \times 7) \\
 &= 50 + 35 \\
 &= 85
 \end{aligned}$$

		Think Smart	Think Quick
1.	5×15	$(5 \times 10) + (5 \times 5) = \square + \square$	$5 \times 15 = \square$
2.	5×14	$(5 \times 10) + (5 \times 4) = \square + \square$	$5 \times 14 = \square$
3.	5×11	$(5 \times 10) + (5 \times 1) = \square + \square$	$5 \times 11 = \square$
4.	5×13	$(5 \times 10) + (5 \times 3) = \square + \square$	$5 \times 13 = \square$
5.	5×12	$(5 \times 10) + (5 \times 2) = \square + \square$	$5 \times 12 = \square$
6.	5×18	$(5 \times 10) + (5 \times 8) = \square + \square$	$5 \times 18 = \square$
7.	5×16	$(5 \times 10) + (5 \times 6) = \square + \square$	$5 \times 16 = \square$
8.	5×19	$(5 \times 10) + (5 \times 9) = \square + \square$	$5 \times 19 = \square$
9.	5×17	$(5 \times 10) + (5 \times 7) = \square + \square$	$5 \times 17 = \square$
10.	5×20	$(5 \times 10) + (5 \times 10) = \square + \square$	$5 \times 20 = \square$

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Multiply by 6



Write out the partial products then add them in your head.

To multiply 6 times a double-digit number, break the number into two parts. Multiply 6 times the first part then 6 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 6 \times 17 &= (6 \times 10) + (6 \times 7) \\
 &= 60 + 42 \\
 &= 102
 \end{aligned}$$

	Think Smart		Think Quick
1.	6×15	$(6 \times 10) + (6 \times 5) = \square + \square$	$6 \times 15 = \square$
2.	6×14	$(6 \times 10) + (6 \times 4) = \square + \square$	$6 \times 14 = \square$
3.	6×11	$(6 \times 10) + (6 \times 1) = \square + \square$	$6 \times 11 = \square$
4.	6×13	$(6 \times 10) + (6 \times 3) = \square + \square$	$6 \times 13 = \square$
5.	6×12	$(6 \times 10) + (6 \times 2) = \square + \square$	$6 \times 12 = \square$
6.	6×18	$(6 \times 10) + (6 \times 8) = \square + \square$	$6 \times 18 = \square$
7.	6×16	$(6 \times 10) + (6 \times 6) = \square + \square$	$6 \times 16 = \square$
8.	6×19	$(6 \times 10) + (6 \times 9) = \square + \square$	$6 \times 19 = \square$
9.	6×17	$(6 \times 10) + (6 \times 7) = \square + \square$	$6 \times 17 = \square$
10.	6×20	$(6 \times 10) + (6 \times 10) = \square + \square$	$6 \times 20 = \square$

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Multiply by 7



Write out the partial products then add them in your head.

To multiply 7 times a double-digit number, break the number into two parts. Multiply 7 times the first part then 7 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 7 \times 17 &= (7 \times 10) + (7 \times 7) \\
 &= 70 + 49 \\
 &= 119
 \end{aligned}$$

		Think Smart	Think Quick
1.	7×15	$(7 \times 10) + (7 \times 5) = \square + \square$	$7 \times 15 = \square$
2.	7×14	$(7 \times 10) + (7 \times 4) = \square + \square$	$7 \times 14 = \square$
3.	7×11	$(7 \times 10) + (7 \times 1) = \square + \square$	$7 \times 11 = \square$
4.	7×13	$(7 \times 10) + (7 \times 3) = \square + \square$	$7 \times 13 = \square$
5.	7×12	$(7 \times 10) + (7 \times 2) = \square + \square$	$7 \times 12 = \square$
6.	7×18	$(7 \times 10) + (7 \times 8) = \square + \square$	$7 \times 18 = \square$
7.	7×16	$(7 \times 10) + (7 \times 6) = \square + \square$	$7 \times 16 = \square$
8.	7×19	$(7 \times 10) + (7 \times 9) = \square + \square$	$7 \times 19 = \square$
9.	7×17	$(7 \times 10) + (7 \times 7) = \square + \square$	$7 \times 17 = \square$
10.	7×20	$(7 \times 10) + (7 \times 10) = \square + \square$	$7 \times 20 = \square$

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 8



Write out the partial products then add them in your head.

To multiply **8** times a double-digit number, break the number into two parts. Multiply **8** times the first part then **8** times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 8 \times 17 &= (8 \times 10) + (8 \times 7) \\
 &= 80 + 56 \\
 &= 136
 \end{aligned}$$

		Think Smart	Think Quick
1.	8×15	$(8 \times 10) + (8 \times 5) = \square + \square$	$8 \times 15 = \square$
2.	8×14	$(8 \times 10) + (8 \times 4) = \square + \square$	$8 \times 14 = \square$
3.	8×11	$(8 \times 10) + (8 \times 1) = \square + \square$	$8 \times 11 = \square$
4.	8×13	$(8 \times 10) + (8 \times 3) = \square + \square$	$8 \times 13 = \square$
5.	8×12	$(8 \times 10) + (8 \times 2) = \square + \square$	$8 \times 12 = \square$
6.	8×18	$(8 \times 10) + (8 \times 8) = \square + \square$	$8 \times 18 = \square$
7.	8×16	$(8 \times 10) + (8 \times 6) = \square + \square$	$8 \times 16 = \square$
8.	8×19	$(8 \times 10) + (8 \times 9) = \square + \square$	$8 \times 19 = \square$
9.	8×17	$(8 \times 10) + (8 \times 7) = \square + \square$	$8 \times 17 = \square$
10.	8×20	$(8 \times 10) + (8 \times 10) = \square + \square$	$8 \times 20 = \square$

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 10



Write out the partial products then add them in your head.

To multiply 10 times a double-digit number, break the number into two parts. Multiply 10 times the first part then 10 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 10 \times 17 &= (10 \times 10) + (10 \times 7) \\
 &= 100 + 70 \\
 &= 170
 \end{aligned}$$

		Think Smart	Think Quick
1.	10×15	$(10 \times 10) + (10 \times 5) = \square + \square$	$10 \times 15 = \square$
2.	10×14	$(10 \times 10) + (10 \times 4) = \square + \square$	$10 \times 14 = \square$
3.	10×11	$(10 \times 10) + (10 \times 1) = \square + \square$	$10 \times 11 = \square$
4.	10×13	$(10 \times 10) + (10 \times 3) = \square + \square$	$10 \times 13 = \square$
5.	10×12	$(10 \times 10) + (10 \times 2) = \square + \square$	$10 \times 12 = \square$
6.	10×18	$(10 \times 10) + (10 \times 8) = \square + \square$	$10 \times 18 = \square$
7.	10×16	$(10 \times 10) + (10 \times 6) = \square + \square$	$10 \times 16 = \square$
8.	10×19	$(10 \times 10) + (10 \times 9) = \square + \square$	$10 \times 19 = \square$
9.	10×17	$(10 \times 10) + (10 \times 7) = \square + \square$	$10 \times 17 = \square$
10.	10×20	$(10 \times 10) + (10 \times 10) = \square + \square$	$10 \times 20 = \square$

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 12



Write out the partial products then add them in your head.

12 times a number is 10 times the number plus 2 times the number. The sum of these "partial products" is the total product or answer.

$$\begin{aligned}
 12 \times 7 &= (10 \times 7) + (2 \times 7) \\
 &= 70 + 14 \\
 &= 84
 \end{aligned}$$

		Think Smart	Think Quick
1.	12×5	$(10 \times 5) + (2 \times 5) = \boxed{} + \boxed{}$	$12 \times 5 = \boxed{}$
2.	12×4	$(10 \times 4) + (2 \times 4) = \boxed{} + \boxed{}$	$12 \times 4 = \boxed{}$
3.	12×1	$(10 \times 1) + (2 \times 1) = \boxed{} + \boxed{}$	$12 \times 1 = \boxed{}$
4.	12×3	$(10 \times 3) + (2 \times 3) = \boxed{} + \boxed{}$	$12 \times 3 = \boxed{}$
5.	12×2	$(10 \times 2) + (2 \times 2) = \boxed{} + \boxed{}$	$12 \times 2 = \boxed{}$
6.	12×8	$(10 \times 8) + (2 \times 8) = \boxed{} + \boxed{}$	$12 \times 8 = \boxed{}$
7.	12×6	$(10 \times 6) + (2 \times 6) = \boxed{} + \boxed{}$	$12 \times 6 = \boxed{}$
8.	12×9	$(10 \times 9) + (2 \times 9) = \boxed{} + \boxed{}$	$12 \times 9 = \boxed{}$
9.	12×7	$(10 \times 7) + (2 \times 7) = \boxed{} + \boxed{}$	$12 \times 7 = \boxed{}$
10.	12×10	$(10 \times 10) + (2 \times 10) = \boxed{} + \boxed{}$	$12 \times 10 = \boxed{}$

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 2



Now do everything in your head!

To multiply 2 times a double-digit number, break the number into two parts. Multiply 2 times the first part then 2 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 2 \times 17 &= (2 \times 10) + (2 \times 7) \\
 &= 20 + 14 \\
 &= 34
 \end{aligned}$$

	Think Smart	Think Quick
1. 2×15	$(2 \times 10) + (2 \times 5)$	$2 \times 15 =$ <input type="text"/>
2. 2×14	$(2 \times 10) + (2 \times 4)$	$2 \times 14 =$ <input type="text"/>
3. 2×11	$(2 \times 10) + (2 \times 1)$	$2 \times 11 =$ <input type="text"/>
4. 2×13	$(2 \times 10) + (2 \times 3)$	$2 \times 13 =$ <input type="text"/>
5. 2×12	$(2 \times 10) + (2 \times 2)$	$2 \times 12 =$ <input type="text"/>
6. 2×18	$(2 \times 10) + (2 \times 8)$	$2 \times 18 =$ <input type="text"/>
7. 2×16	$(2 \times 10) + (2 \times 6)$	$2 \times 16 =$ <input type="text"/>
8. 2×19	$(2 \times 10) + (2 \times 9)$	$2 \times 19 =$ <input type="text"/>
9. 2×17	$(2 \times 10) + (2 \times 7)$	$2 \times 17 =$ <input type="text"/>
10. 2×20	$(2 \times 10) + (2 \times 10)$	$2 \times 20 =$ <input type="text"/>

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 4



Now do everything in your head!

To multiply 4 times a double-digit number, break the number into two parts. Multiply 4 times the first part then 4 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 4 \times 17 &= (4 \times 10) + (4 \times 7) \\
 &= 40 + 28 \\
 &= 68
 \end{aligned}$$

		Think Smart	Think Quick
1.	4×15	$(4 \times 10) + (4 \times 5)$	$4 \times 15 =$ <input type="text"/>
2.	4×14	$(4 \times 10) + (4 \times 4)$	$4 \times 14 =$ <input type="text"/>
3.	4×11	$(4 \times 10) + (4 \times 1)$	$4 \times 11 =$ <input type="text"/>
4.	4×13	$(4 \times 10) + (4 \times 3)$	$4 \times 13 =$ <input type="text"/>
5.	4×12	$(4 \times 10) + (4 \times 2)$	$4 \times 12 =$ <input type="text"/>
6.	4×18	$(4 \times 10) + (4 \times 8)$	$4 \times 18 =$ <input type="text"/>
7.	4×16	$(4 \times 10) + (4 \times 6)$	$4 \times 16 =$ <input type="text"/>
8.	4×19	$(4 \times 10) + (4 \times 9)$	$4 \times 19 =$ <input type="text"/>
9.	4×17	$(4 \times 10) + (4 \times 7)$	$4 \times 17 =$ <input type="text"/>
10.	4×20	$(4 \times 10) + (4 \times 10)$	$4 \times 20 =$ <input type="text"/>

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 6



Now do everything in your head!

To multiply 6 times a double-digit number, break the number into two parts. Multiply 6 times the first part then 6 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 6 \times 17 &= (6 \times 10) + (6 \times 7) \\
 &= 60 + 42 \\
 &= 102
 \end{aligned}$$

		Think Smart	Think Quick
1.	6×15	$(6 \times 10) + (6 \times 5)$	$6 \times 15 =$ <input type="text"/>
2.	6×14	$(6 \times 10) + (6 \times 4)$	$6 \times 14 =$ <input type="text"/>
3.	6×11	$(6 \times 10) + (6 \times 1)$	$6 \times 11 =$ <input type="text"/>
4.	6×13	$(6 \times 10) + (6 \times 3)$	$6 \times 13 =$ <input type="text"/>
5.	6×12	$(6 \times 10) + (6 \times 2)$	$6 \times 12 =$ <input type="text"/>
6.	6×18	$(6 \times 10) + (6 \times 8)$	$6 \times 18 =$ <input type="text"/>
7.	6×16	$(6 \times 10) + (6 \times 6)$	$6 \times 16 =$ <input type="text"/>
8.	6×19	$(6 \times 10) + (6 \times 9)$	$6 \times 19 =$ <input type="text"/>
9.	6×17	$(6 \times 10) + (6 \times 7)$	$6 \times 17 =$ <input type="text"/>
10.	6×20	$(6 \times 10) + (6 \times 10)$	$6 \times 20 =$ <input type="text"/>

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 8



Now do everything in your head!

To multiply **8** times a double-digit number, break the number into two parts. Multiply **8** times the first part then **8** times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 8 \times 17 &= (8 \times 10) + (8 \times 7) \\
 &= 80 + 56 \\
 &= 136
 \end{aligned}$$

		Think Smart	Think Quick
1.	8×15	$(8 \times 10) + (8 \times 5)$	$8 \times 15 =$ <input type="text"/>
2.	8×14	$(8 \times 10) + (8 \times 4)$	$8 \times 14 =$ <input type="text"/>
3.	8×11	$(8 \times 10) + (8 \times 1)$	$8 \times 11 =$ <input type="text"/>
4.	8×13	$(8 \times 10) + (8 \times 3)$	$8 \times 13 =$ <input type="text"/>
5.	8×12	$(8 \times 10) + (8 \times 2)$	$8 \times 12 =$ <input type="text"/>
6.	8×18	$(8 \times 10) + (8 \times 8)$	$8 \times 18 =$ <input type="text"/>
7.	8×16	$(8 \times 10) + (8 \times 6)$	$8 \times 16 =$ <input type="text"/>
8.	8×19	$(8 \times 10) + (8 \times 9)$	$8 \times 19 =$ <input type="text"/>
9.	8×17	$(8 \times 10) + (8 \times 7)$	$8 \times 17 =$ <input type="text"/>
10.	8×20	$(8 \times 10) + (8 \times 10)$	$8 \times 20 =$ <input type="text"/>

Name:	Date:
Teacher:	Part 3: Beyond the Basic Times Tables

Multiply by 10



Now do everything in your head!

To multiply 10 times a double-digit number, break the number into two parts. Multiply 10 times the first part then 10 times the second part. Add these "partial products" to get the total product.

$$\begin{aligned}
 10 \times 17 &= (10 \times 10) + (10 \times 7) \\
 &= 100 + 70 \\
 &= 170
 \end{aligned}$$

		Think Smart	Think Quick
1.	10×15	$(10 \times 10) + (10 \times 5)$	$10 \times 15 =$ <input type="text"/>
2.	10×14	$(10 \times 10) + (10 \times 4)$	$10 \times 14 =$ <input type="text"/>
3.	10×11	$(10 \times 10) + (10 \times 1)$	$10 \times 11 =$ <input type="text"/>
4.	10×13	$(10 \times 10) + (10 \times 3)$	$10 \times 13 =$ <input type="text"/>
5.	10×12	$(10 \times 10) + (10 \times 2)$	$10 \times 12 =$ <input type="text"/>
6.	10×18	$(10 \times 10) + (10 \times 8)$	$10 \times 18 =$ <input type="text"/>
7.	10×16	$(10 \times 10) + (10 \times 6)$	$10 \times 16 =$ <input type="text"/>
8.	10×19	$(10 \times 10) + (10 \times 9)$	$10 \times 19 =$ <input type="text"/>
9.	10×17	$(10 \times 10) + (10 \times 7)$	$10 \times 17 =$ <input type="text"/>
10.	10×20	$(10 \times 10) + (10 \times 10)$	$10 \times 20 =$ <input type="text"/>

Summer Work Packet



Math - Fluency Practice
Division

Name: _____

Strategy: Division - Partial

Date: _____

Worksheet: 3-Partials

Partials Division Strategy: Instead of dividing a big number all at once, first break it into parts and divide the parts. Add the resulting “partial quotients” to get the total quotient or answer.

Example

What is $78 \div 6$?

78 is 60 plus 18.
Divide 60 by 6 to get 10.
Divide 18 by 6 to get 3.
The answer is $10+3=13$.

$$\begin{array}{r} 78 \div 6 \Rightarrow \\ \underbrace{60 \quad 18} \end{array}$$

Partial 1	+	Partial 2	=	Answer
10		6		13
<small>$60 \div 6$</small>		<small>$18 \div 6$</small>		

1. $90 \div 6 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 90 \\ \underbrace{60 \quad 30} \end{array}$
 $60 \div 6$
 $30 \div 6$

2. $68 \div 4 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 68 \\ \underbrace{40 \quad 28} \end{array}$
 $40 \div 4$
 $28 \div 4$

3. $54 \div 3 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 54 \\ \underbrace{30 \quad 24} \end{array}$
 $30 \div 3$
 $24 \div 3$

4. $144 \div 9 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 144 \\ \underbrace{90 \quad 54} \end{array}$
 $90 \div 9$
 $54 \div 9$

5. $144 \div 8 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 144 \\ \underbrace{80 \quad 64} \end{array}$
 $80 \div 8$
 $64 \div 8$

6. $30 \div 2 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 30 \\ \underbrace{20 \quad 10} \end{array}$
 $20 \div 2$
 $10 \div 2$

7. $114 \div 6 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 114 \\ \underbrace{60 \quad 54} \end{array}$
 $60 \div 6$
 $54 \div 6$

8. $136 \div 8 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 136 \\ \underbrace{80 \quad 56} \end{array}$
 $80 \div 8$
 $56 \div 8$

9. $126 \div 7 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 126 \\ \underbrace{70 \quad 56} \end{array}$
 $70 \div 7$
 $56 \div 7$

10. $76 \div 4 \Rightarrow$ \square + \square = \square
 $\begin{array}{r} 76 \\ \underbrace{40 \quad 36} \end{array}$
 $40 \div 4$
 $36 \div 4$

Name: _____

Strategy: Division - Partials

Date: _____

Worksheet: 7-Partials

Partials Division Strategy: Instead of dividing a big number all at once, first break it into parts and divide the parts. Add the resulting “partial quotients” to get the total quotient or answer.

Example

What is $57 \div 3$?

57 is 30 plus 27.

Divide 30 by 3 to get 10.

Divide 27 by 3 to get 9.

The answer is $10+9 = 19$.

$$\begin{array}{r} 57 \div 3 \Rightarrow \\ \hline 30 \quad 27 \end{array}$$

Partial 1	Partial 2	Answer
$\boxed{10}$	$+$ $\boxed{9}$	$=$ $\boxed{19}$
$30 \div 3$	$27 \div 3$	

1. $\begin{array}{r} 26 \div 2 \Rightarrow \\ \hline 20 \quad 6 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $20 \div 2 \quad 6 \div 2$

2. $\begin{array}{r} 104 \div 8 \Rightarrow \\ \hline 80 \quad 24 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $80 \div 8 \quad 24 \div 8$

3. $\begin{array}{r} 162 \div 9 \Rightarrow \\ \hline 90 \quad 72 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $90 \div 9 \quad 72 \div 9$

4. $\begin{array}{r} 54 \div 3 \Rightarrow \\ \hline 30 \quad 24 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $30 \div 3 \quad 24 \div 3$

5. $\begin{array}{r} 76 \div 4 \Rightarrow \\ \hline 40 \quad 36 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $40 \div 4 \quad 36 \div 4$

6. $\begin{array}{r} 57 \div 3 \Rightarrow \\ \hline 30 \quad 27 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $30 \div 3 \quad 27 \div 3$

7. $\begin{array}{r} 22 \div 2 \Rightarrow \\ \hline 20 \quad 2 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $20 \div 2 \quad 2 \div 2$

8. $\begin{array}{r} 108 \div 6 \Rightarrow \\ \hline 60 \quad 48 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $60 \div 6 \quad 48 \div 6$

9. $\begin{array}{r} 112 \div 7 \Rightarrow \\ \hline 70 \quad 42 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $70 \div 7 \quad 42 \div 7$

10. $\begin{array}{r} 135 \div 9 \Rightarrow \\ \hline 90 \quad 45 \end{array} \Rightarrow \boxed{} + \boxed{} = \boxed{}$
 $90 \div 9 \quad 45 \div 9$

Name: _____

Strategy: Division - Partials

Date: _____

Worksheet: 11-Partials

Partial Division Strategy: Instead of dividing a big number all at once, first break it into parts and divide the parts. Add the resulting “partial quotients” to get the total quotient or answer.

Example

What is $68 \div 4$?

68 is 40 plus 28.
Divide 40 by 4 to get 10.
Divide 28 by 4 to get 7.
The answer is $10+7 = 17$.

Answer

$$\begin{array}{r} 68 \div 4 = \boxed{17} \\ \wedge \\ 40 \quad 28 \end{array}$$

1. $96 \div 6 = \boxed{}$
 $\begin{array}{r} \wedge \\ 60 \quad 36 \end{array}$

6. $80 \div 5 = \boxed{}$
 $\begin{array}{r} \wedge \\ 50 \quad 30 \end{array}$

11. $80 \div 5 = \boxed{}$
 $\begin{array}{r} \wedge \\ 50 \quad 30 \end{array}$

2. $153 \div 9 = \boxed{}$
 $\begin{array}{r} \wedge \\ 90 \quad 63 \end{array}$

7. $64 \div 4 = \boxed{}$
 $\begin{array}{r} \wedge \\ 40 \quad 24 \end{array}$

12. $64 \div 4 = \boxed{}$
 $\begin{array}{r} \wedge \\ 40 \quad 24 \end{array}$

3. $34 \div 2 = \boxed{}$
 $\begin{array}{r} \wedge \\ 20 \quad 14 \end{array}$

8. $133 \div 7 = \boxed{}$
 $\begin{array}{r} \wedge \\ 70 \quad 63 \end{array}$

13. $133 \div 7 = \boxed{}$
 $\begin{array}{r} \wedge \\ 70 \quad 63 \end{array}$

4. $128 \div 8 = \boxed{}$
 $\begin{array}{r} \wedge \\ 80 \quad 48 \end{array}$

9. $48 \div 3 = \boxed{}$
 $\begin{array}{r} \wedge \\ 30 \quad 18 \end{array}$

14. $48 \div 3 = \boxed{}$
 $\begin{array}{r} \wedge \\ 30 \quad 18 \end{array}$

5. $56 \div 4 = \boxed{}$
 $\begin{array}{r} \wedge \\ 40 \quad 16 \end{array}$

10. $55 \div 5 = \boxed{}$
 $\begin{array}{r} \wedge \\ 50 \quad 5 \end{array}$

15. $55 \div 5 = \boxed{}$
 $\begin{array}{r} \wedge \\ 50 \quad 5 \end{array}$

Name: _____

Strategy: Division - Partials

Date: _____

Worksheet: 15-Partials

Partial Division Strategy: Instead of dividing a big number all at once, first break it into parts and divide the parts. Add the resulting “partial quotients” to get the total quotient or answer.

Example

What is $78 \div 6$?

78 is 60 plus 18.
Divide 60 by 6 to get 10.
Divide 18 by 6 to get 3.
The answer is $10+3 = 13$.

Answer

$$\begin{array}{r} 78 \div 6 = \boxed{13} \\ \underline{60} \\ 18 \\ \underline{18} \\ 0 \end{array}$$

1. $\begin{array}{r} 24 \div 2 = \boxed{} \\ \underline{20} \\ 4 \end{array}$

6. $\begin{array}{r} 152 \div 8 = \boxed{} \\ \underline{80} \\ 72 \end{array}$

11. $\begin{array}{r} 68 \div 4 = \boxed{} \\ \underline{40} \\ 28 \end{array}$

2. $\begin{array}{r} 136 \div 8 = \boxed{} \\ \underline{80} \\ 56 \end{array}$

7. $\begin{array}{r} 56 \div 4 = \boxed{} \\ \underline{40} \\ 16 \end{array}$

12. $\begin{array}{r} 64 \div 4 = \boxed{} \\ \underline{40} \\ 24 \end{array}$

3. $\begin{array}{r} 76 \div 4 = \boxed{} \\ \underline{40} \\ 36 \end{array}$

8. $\begin{array}{r} 171 \div 9 = \boxed{} \\ \underline{90} \\ 81 \end{array}$

13. $\begin{array}{r} 152 \div 8 = \boxed{} \\ \underline{80} \\ 72 \end{array}$

4. $\begin{array}{r} 28 \div 2 = \boxed{} \\ \underline{20} \\ 8 \end{array}$

9. $\begin{array}{r} 128 \div 8 = \boxed{} \\ \underline{80} \\ 48 \end{array}$

14. $\begin{array}{r} 80 \div 5 = \boxed{} \\ \underline{50} \\ 30 \end{array}$

5. $\begin{array}{r} 126 \div 7 = \boxed{} \\ \underline{70} \\ 56 \end{array}$

10. $\begin{array}{r} 114 \div 6 = \boxed{} \\ \underline{60} \\ 54 \end{array}$

15. $\begin{array}{r} 126 \div 9 = \boxed{} \\ \underline{90} \\ 36 \end{array}$

Name: _____

Strategy: Division - Partial

Date: _____

Worksheet: 19-Partial

Partial Division Strategy: Instead of dividing a big number all at once, first break it into parts and divide the parts. Add the resulting "partial quotients" to get the total quotient or answer.

Example

What is $84 \div 6$?

84 is 60 plus 24.
Divide 60 by 6 to get 10.
Divide 24 by 6 to get 4.
The answer is $10+4 = 14$.

Answer

$$\begin{array}{r} 84 \div 6 = \boxed{14} \\ \wedge \\ 60 \quad 24 \end{array}$$

1. $30 \div 2 = \boxed{}$
 $\begin{array}{r} 30 \\ \wedge \\ 20 \quad 10 \end{array}$

6. $57 \div 3 = \boxed{}$
 $\begin{array}{r} 57 \\ \wedge \\ 30 \quad 27 \end{array}$

11. $119 \div 7 = \boxed{}$
 $\begin{array}{r} 119 \\ \wedge \\ 70 \quad 49 \end{array}$

2. $153 \div 9 = \boxed{}$
 $\begin{array}{r} 153 \\ \wedge \\ 90 \quad 63 \end{array}$

7. $64 \div 4 = \boxed{}$
 $\begin{array}{r} 64 \\ \wedge \\ 40 \quad 24 \end{array}$

12. $64 \div 4 = \boxed{}$
 $\begin{array}{r} 64 \\ \wedge \\ 40 \quad 24 \end{array}$

3. $162 \div 9 = \boxed{}$
 $\begin{array}{r} 162 \\ \wedge \\ 90 \quad 72 \end{array}$

8. $128 \div 8 = \boxed{}$
 $\begin{array}{r} 128 \\ \wedge \\ 80 \quad 48 \end{array}$

13. $128 \div 8 = \boxed{}$
 $\begin{array}{r} 128 \\ \wedge \\ 80 \quad 48 \end{array}$

4. $126 \div 9 = \boxed{}$
 $\begin{array}{r} 126 \\ \wedge \\ 90 \quad 36 \end{array}$

9. $48 \div 3 = \boxed{}$
 $\begin{array}{r} 48 \\ \wedge \\ 30 \quad 18 \end{array}$

14. $48 \div 3 = \boxed{}$
 $\begin{array}{r} 48 \\ \wedge \\ 30 \quad 18 \end{array}$

5. $108 \div 6 = \boxed{}$
 $\begin{array}{r} 108 \\ \wedge \\ 60 \quad 48 \end{array}$

10. $64 \div 4 = \boxed{}$
 $\begin{array}{r} 64 \\ \wedge \\ 40 \quad 24 \end{array}$

15. $91 \div 7 = \boxed{}$
 $\begin{array}{r} 91 \\ \wedge \\ 70 \quad 21 \end{array}$