Part Numbers

Primary Mathematics
Study of fractions, decimals, money & time
(Grades 1 & 2)

LEARNING LOG

http://d1gqpdz2u4eqm.cloudfront.net/wp-content/uploads/2017/03/03031956/madisongenuinehondaparts.jpg

Name: _____

Primary Part Numbers Learning Log

First Edition, June 2017
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and revise/customize it, please contact:
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This document will be used as a pilot resource to support innovative schools. The intent of sharing this first version with students, staff and families is so we can gather further input for future revisions of this living curriculum. If you use these materials please give credit to the author(s) of this initial work, in your introduction.

PURPOSE of LEARNING LOG RESOURCE:

1. To support the Ontario Mathematics Curriculum
2. To support independent and paired study during station work or during home study (holiday or at-home interest/extended homework activities)
3. To add support as an enrichment or remedial resource
.. (students can work at their own pace)
4. To provide a learning log (evidence of learning) built in student resources

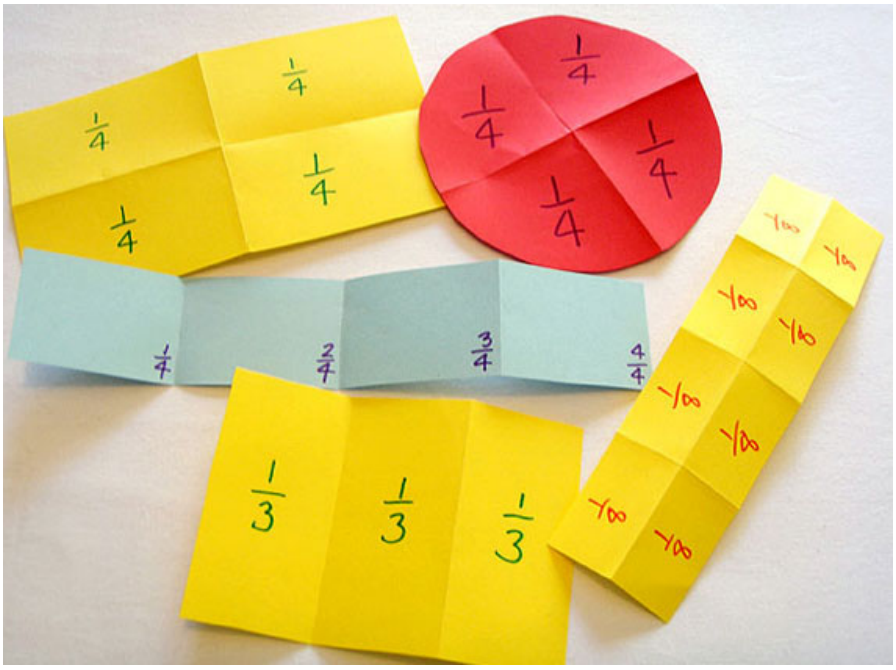
What's in each lesson/unit?

- ***Check In*** – (diagnostic quiz – to reduce repeated teaching)
- ***Essential Targets (ET)*** – state or provincial expectations
- ***Examples*** (patterns for examining the math)
- ***TECH CHECK*** (more ways and examples for practicing the math)
- ***REAL WORLD Problems*** (context for math)
- ***Fun and Games*** (activities for making memories)
- ***Reciprocal Teaching*** (talking and demonstrating 'like a teacher')
- ***GOT IT*** (learning log/notebook evidence of learning)
- ***Habit Check*** (checking in on how students are doing the math)
- ***Extensions*** (students can extend where lesson leads next)
- ***Master Quiz*** (sample unit quiz)
- ***Math Project*** (culminating task revealing applied mastery of many ET's)

The MATH Challenge!

Trailblazer (Expert)	180+ points
Pathfinder (Apprentice)	160-179 - points
Rookie (Novice)	< than 160 points

Challenge	Maximum Points
Rounding Quiz	30
Fraction Quiz	70
Money Quiz	40
Time Quiz	40
Learning Log Challenge (complete tasks in book)	10
Classroom Work	10
TOTAL	200



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A. Whole Parts of Whole Numbers

Check-In (diagnostics)

Maybe you already know all this?

Show your teacher what you know!

Name : _____ Score : _____

Rounding Numbers

Sheet 1

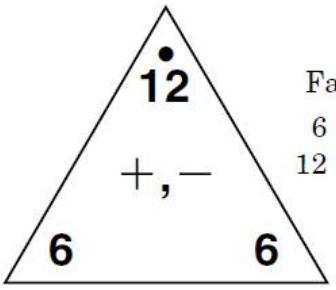
Q. No	Number	Round to the nearest ten	Round to the nearest hundred	Round to the nearest thousand
1)	2,815			
2)	75,391			
3)	316,479			
4)	932			
5)	8,253			
6)	17,638			
7)	593,174			
8)	4,742			
9)	61,586			
10)	939,425			

Printable Math Worksheets @ www.mathworksheets4kids.com

1. Composing and Decomposing Whole Numbers

RULE: Knowing fact families can help you see that whole numbers can be split up into equal and non-equal parts.

EXAMPLE:



Fact family:
$6 + 6 = 12$
$12 - 6 = 6$

Addition / Subtraction Fact Triangle MathATube.com

http://www.mathatube.com/images/ffact-tr.JPG

When 12 is split into 2 equal parts, 6 and 6, this is called decomposing into 2 equal parts.

Other fact family triangles for 12 that are not equal include:	Addition and subtraction sentences can be made from fact families:
• 12, 11, 1 • 12, 10, 2 • 12, 9, 3 • 12, 8, 4 • 12, 7, 5	• 9 + 3 = 12 • 3 + 9 = 12 • 12 -3 = 9 • 12 – 9 =3

GOT IT:

- Decompose the numbers 20, 13 and 9:

20	
13	
9	

- Use hands on materials to make addition and subtraction sentences for 20.
- Compose the number sentences for the fact family:13, 9, 4

How well did I complete these tasks?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

2. Estimating

RULE: Estimating is when you can use clues to make an educated guess about how many parts make a whole. Rounding is what happens when you move a number up if it is $\frac{1}{2}$ or more, and round down if the number is less than $\frac{1}{2}$.

ESTIMATING EXAMPLE:

Estimate: An approximate number rather than and exact number.

http://images.slideplayer.com/25/7710126/slides/slide_13.jpg

GOT IT:

- Estimate the number of Lego pieces in a pile.

I estimated there were _____ pieces of Lego in the pile.

- Check by counting to find the actual number.

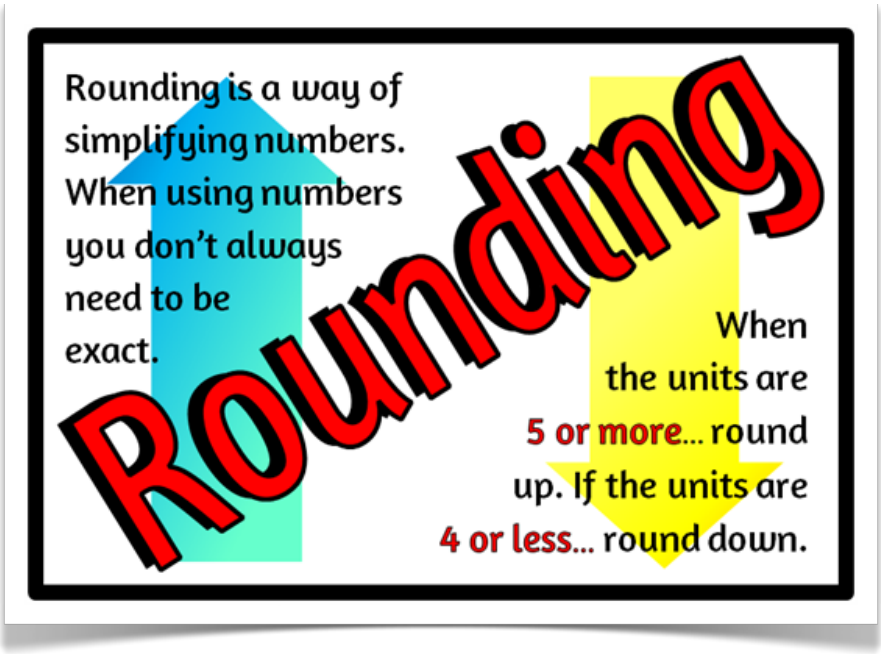
I counted the Lego pieces and discovered there were _____ all together.

How well did I complete these tasks?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

Extension:
Round two-digit numbers to the nearest ten, in problems arising from real-life situations

3. Rounding Up or Down (Extension)

RULE: Rounding is a special kind of estimation; rounding is what happens when you move a number up if it is $\frac{1}{2}$ or more, and round down if the number is less than $\frac{1}{2}$. When you say a rounded number, you say it is "**approximately**" that number!

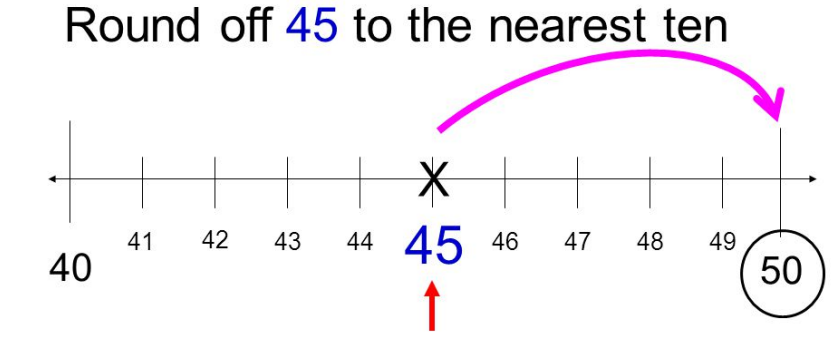


http://www.treetopdisplays.co.uk/images/img2958.png

EXAMPLES:

23 rounded to the nearest ten is APPROXIMATELY 20
27 rounded to the nearest ten is APPROXIMATELY 30
84 rounded to the nearest ten is APPROXIMATELY 80
85 rounded to the nearest ten is APPROXIMATELY 90
(even if it is 1/2 way, you bump it up)

Rounding Off Using Number Line



http://slideplayer.com/slide/6002829/20/images/12/45+%EF%82%BB+50+45+halfway+50+Round+off+45+to+the+nearest+ten+X.jpg

http://www.globalnerdy.com/wordpress/wp-content/uploads/2016/01/rounding-coaster.jpg

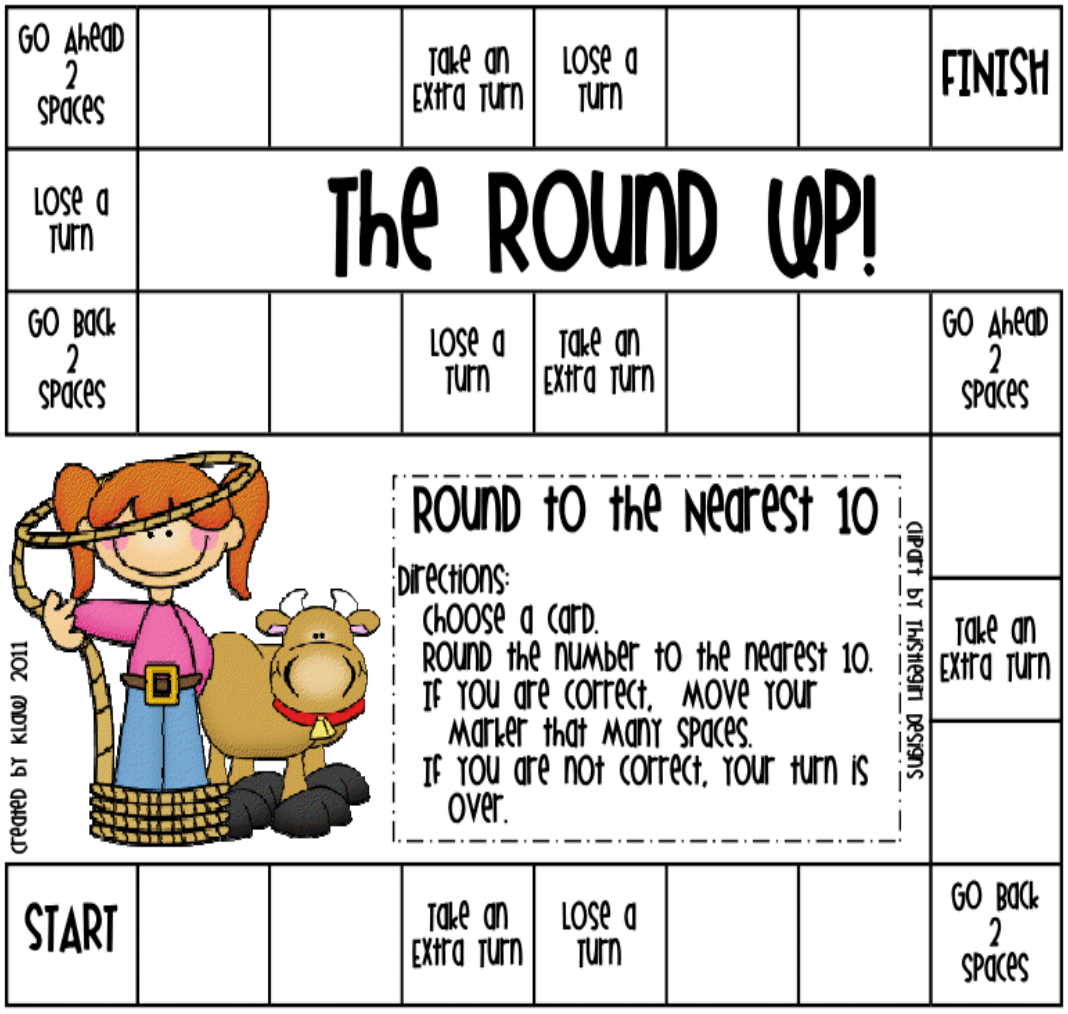
TECH CHECK:

- http://www.mathatube.com/rounding-to-tens.html
- https://ca.ixl.com/math/grade-2/round-to-the-nearest-ten
- https://www.youtube.com/watch?v=CMdck80SHnw

How well did I complete these tasks?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

FUN AND GAMES:

- Create game cards for 'The Round Up' game and play with a partner.

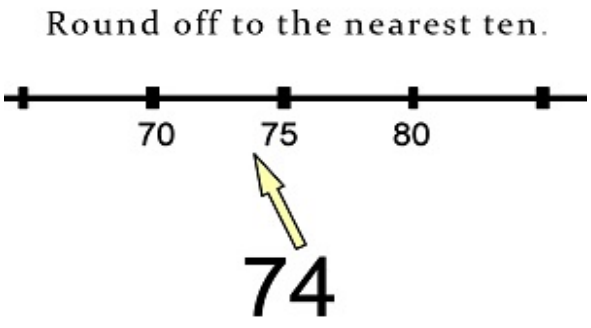


https://s-media-cache-ak0.pinimg.com/originals/4b/83/31/4b8331d0043979c1e9247def346afa42.png

GOT IT:

- Create a number line (using a meter stick) on a white out table.
- Mark on it - equal distances from 0 to 20.
- Put a large dot at 10 and a large dot at 20.
- Show your teacher with hands on materials on the number line, how 17 is closer to 20.
- Round the following to the nearest 10's:

http://www.basic-math-explained.com/images/round-off-tens-1.jpg



(a) 74 - _____

(b) 47 - _____

(c) 65 - _____

(d) 33 - _____

(e) 4 - _____

B. Between 0 and 1

Check-In (diagnostics)

Maybe you already know all this?
Show your teacher what you know!

Part I **(9 marks)**

Choose the correct answers (a, b, c or d) and write its letter in the brackets provided.

1. What fraction of the figure is shaded?
   Find the missing numerator.

   (a) 8
   (b) 3
   (c) 2
   (d) 1

$\frac{?}{8}$ ( )

2. Which of the following fractions is the greatest?

   (a) $\frac{5}{8}$ (b) $\frac{5}{14}$

   (c) $\frac{5}{6}$ (d) $\frac{5}{12}$ ( )

3. Which of the fractions is greater than $\frac{3}{8}$?

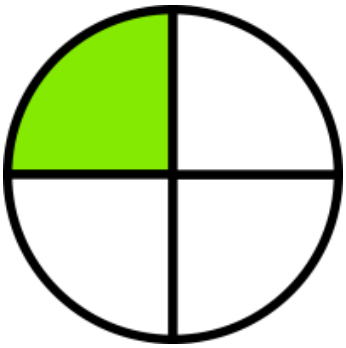
   (a) $\frac{3}{10}$ (b) $\frac{3}{9}$

   (c) $\frac{3}{7}$ (d) $\frac{3}{5}$ ( )

Essential Target (ET) - Divide shapes into equal quarters using images & objects.

4. 4 Parts = 4 Quarters

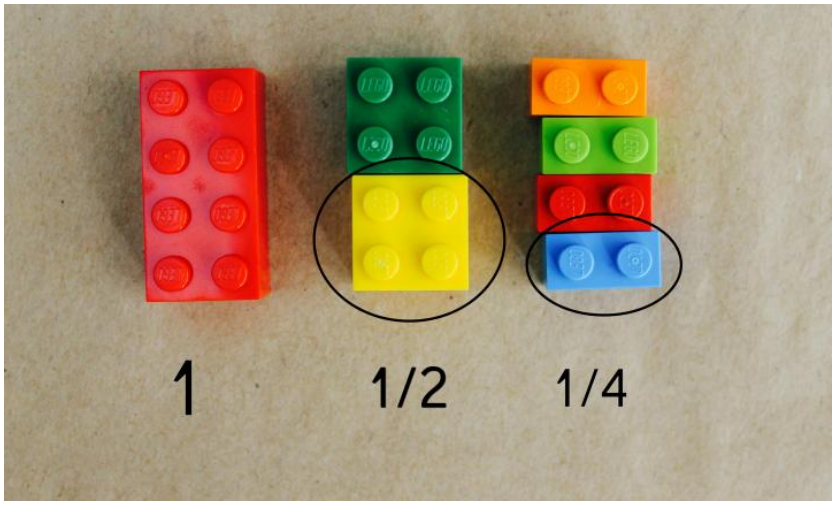
RULE: There are 4 quarters in a whole. $\frac{1}{4}$ is a fraction of a whole. You say "one quarter" or "one fourth".



http://www.homeschoolmath.net/teaching/f/images/1-4.gif

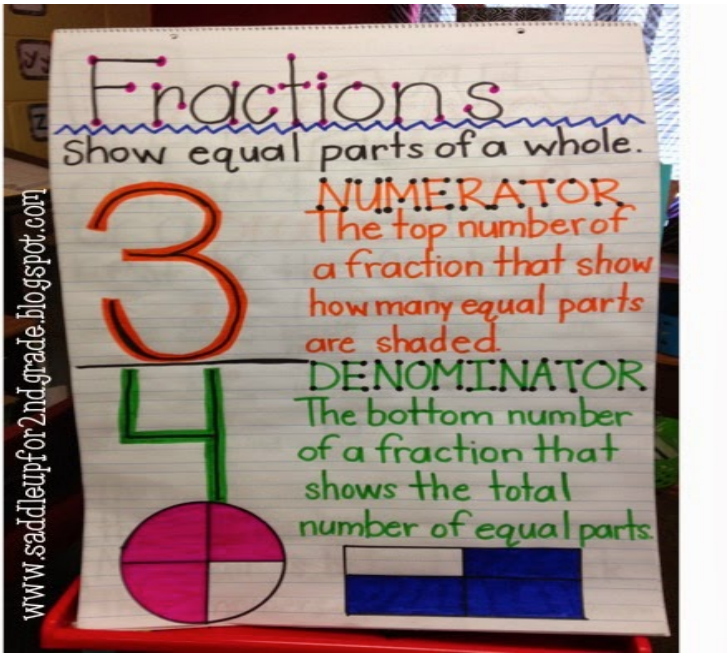
Half of an object has been divided into 2 equal parts.
A quarter of an object has been divided into 4 equal parts.

EXAMPLE:



http://static.kidspot.com.au/cm_assets/73855/lego-graphic-20160118093411.jpg~q75,dx720y432u1r1gg,c--.jpg

- Look at the picture of $\frac{3}{4}$ as a fraction.
- Say the words 'numerator' and 'denominator'.



http://1.bp.blogspot.com/-tzMMAHuQF4o/UzdpeSZavMI/AAAAAAAAC9Y/s8DDUoMfwQI/s1600/Slide12.jpg

- Tell your teacher/math buddy where the numerator and the denominator are located on $\frac{1}{4}$.

RECIPROCAL TEACHING: Using Counters to Make Fractions - It is time to explain how fractions have a numerator and denominator.

1. Using 20 counters make 5 fractions "like a teacher".
2. Share examples and explain the fractions to a friend or family member.
3. Use scrap paper.
4. Have your friend or family member change places and replay what you taught.

FUN AND GAMES:

Frozen Orange Freezies (A Slice is a fraction of a whole)

- With the help of your teacher, cut an orange in half and then in half again – making 4 quarters.
- Freeze the oranges and at the end of the day enjoy them for a healthy snack!

http://beafunmum.com/wp-content/uploads/2013/07/frozen-orange-slices-001.jpg

Step Outside

- Look for things in nature that look like they divide in half or a quarter.
- Share your findings with your class.

http://www.stmarysthorncombe.dorset.sch.uk/wp-content/uploads/117-1080x675.jpg

GOT IT!

- Put together 4 pieces of Lego that are the same size.
- Explain to your teacher which pieces are $\frac{1}{4}$ of the whole.
- Explain how many $\frac{1}{4}$'s are in a half.

- Start with four counters.
- Take 3 counters away from one pile and put them aside or back in the counter container.
- How many quarters are left?

_____/4th

- Count out 12 counters and split up them into 2 wholes and _____/4ths.

- Using 4 pencils, show your teacher what $\frac{1}{4}$ looks like.

- Use counters to show that three fourths (3/4) are bigger than one half, but smaller than one whole.

How well did you divide shapes into equal quarters using images & objects	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

Extension:

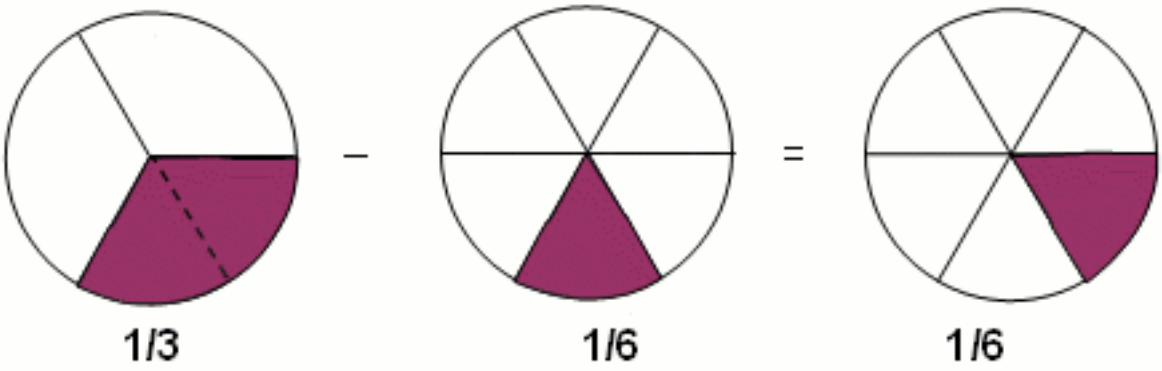
- Using 8 pencils, show your teacher what $\frac{1}{4}$ looks like.

ET - Divide shapes into thirds & sixths in relation to the whole.

5. One Third and One-Sixth

RULE: There are 3 thirds in a whole. There are 6 sixths in a whole. 1/3 is a fraction of a whole and 1/6 is a smaller fraction of a whole. The larger the denominator, the smaller the size of the fraction.

EXAMPLES:



https://test.arb.nzcer.org.nz/sites/default/files/images/research/conceptmaps/ftcm_sub.gif

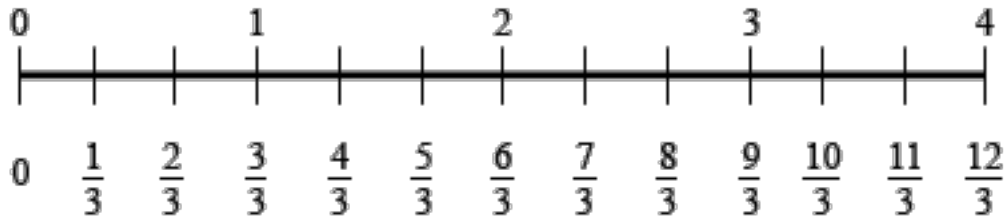
RECIPROCAL TEACHING: Explaining 1/3 and 1/6

1. Using 18 pieces of Lego, explain different ways to show 1/3 and 1/6 "like a teacher".
2. Share examples with a friend or family member.
3. Use scrap paper.
4. Have your friend or family member change places and replay what you taught.

GOT IT:

- Using Lego, show fractions with 3 and 6 as denominators.
- Use Lego to figure out how thirds and sixths can be like and not like each other.

- Look at the number line to see how many thirds there are between each whole number:



https://www.psdblogs.ca/jpodhaniuk/files/2014/10/number-lines-adding-fractions-26ebuis.gif

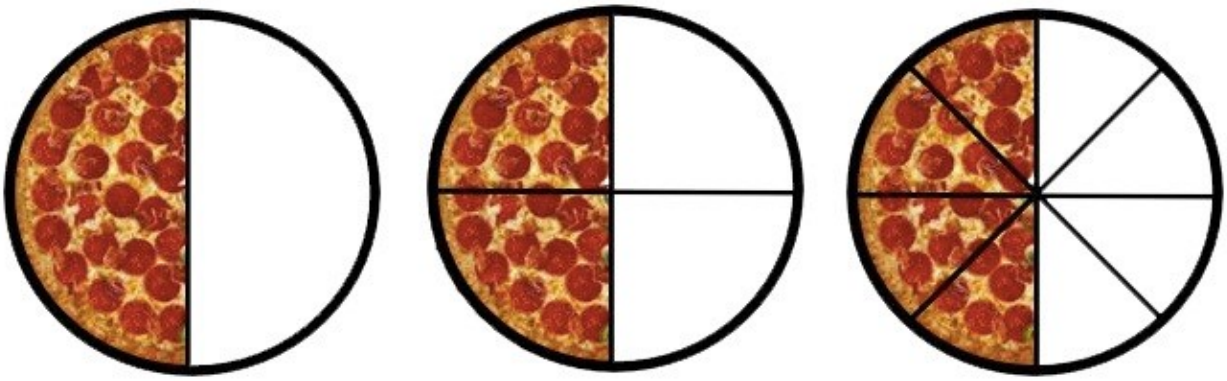
- Create a number line showing 1/6th between 0 and 2:

How well did you divide shapes into thirds & sixths in relation to the whole?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

6. Fraction Factory

RULE: There are many fractions between 0 and 1. The larger the denominator the smaller the fraction. You can divide up most things into small sizes (1/5, 1/7, 1/8/1/9, 1/10,1/11, 1/12…)

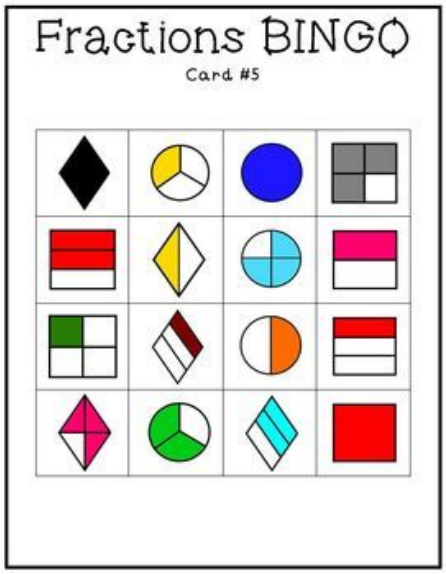
EXAMPLES:



https://i0.wp.com/www.alamandamaths.com/wp-content/uploads/2015/09/789540719.jpg?w=1040

FUN & GAMES: Fraction Bingo

- Create cards for a fraction bingo game.



https://s-media-cache-

ak0.pinimg.com/736x/16/15/90/161590eaf8b06d7ad53c3c7c68404adb--nd-grade-math-math-class.jpg

Alphabet Challenge

The letters of the alphabet are each a fraction of the complete alphabet.

What letter is at:

(a) 2/28 _____

(b) 13/28 _____

(c) 23/28 _____

https://s-media-cache-ak0.pinimg.com/736x/72/29/5c/72295c589ea1fcb648da52f41dab0ff3.jpg

TECH CHECK:

- http://www.abcya.com/counting_fish.htm
- https://www.mathsisfun.com/numbers/skip-counting.html
- https://ca.ixl.com/math/grade-2/skip-counting

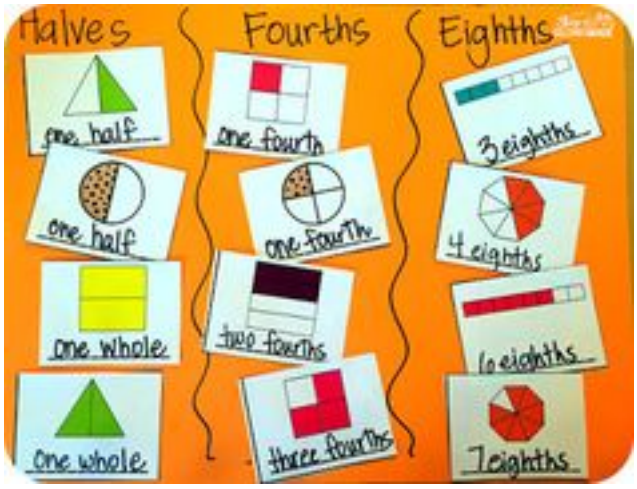
REAL-LIFE PROBLEM:

- More than 8 people are coming to a party.
- Now we need to split the pizza in 12 pieces,(1/12) or twelfths.
- Draw a picture showing the pizza that's left over after 8 people had equal shares.

GOT IT!

- Draw 4 pizzas showing: $\frac{1}{2}$, 2/3, 1/6 and 1/12 shaded in.

- Now look at the chart below to view the different ways to view half (1/2), fourths (1/4) and eighths (1/8)



https://s-media-cache-ak0.pinimg.com/236x/71/ff/d3/71ffd3c79e6bf55086f221557773fe96--teaching-fractions-math-fractions.jpg

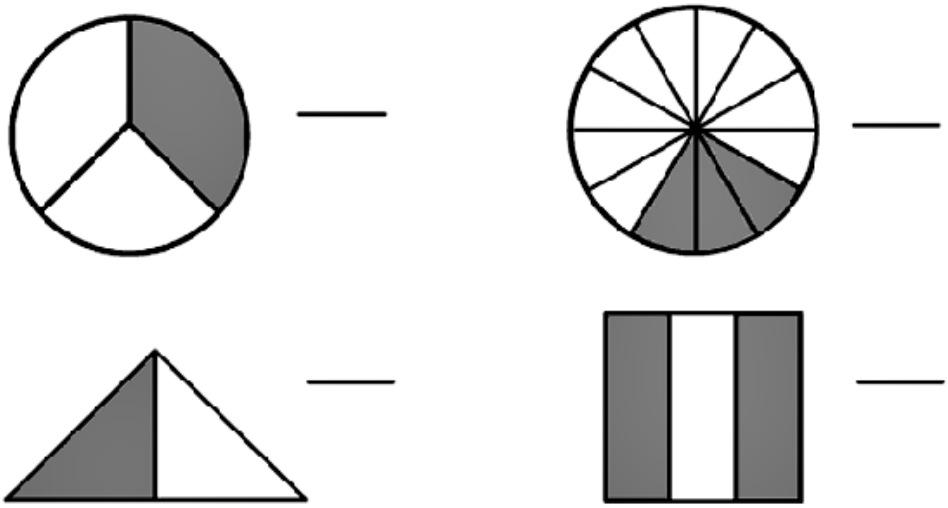
- Create a similar chart with labelled pictures below for thirds and fifths.

Thirds (1/3)	Fifths (1/5)

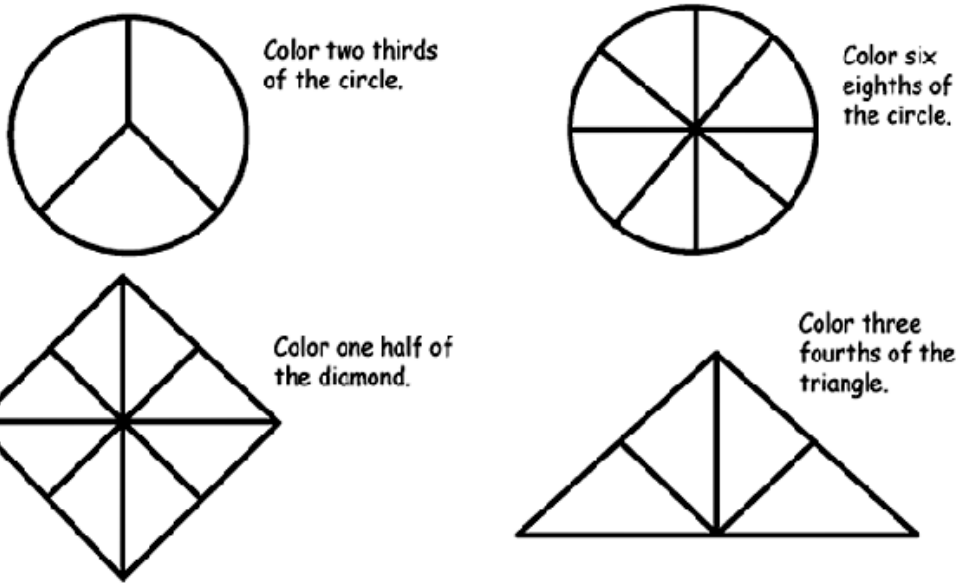
- Record the fraction below:

WRITING FRACTIONS

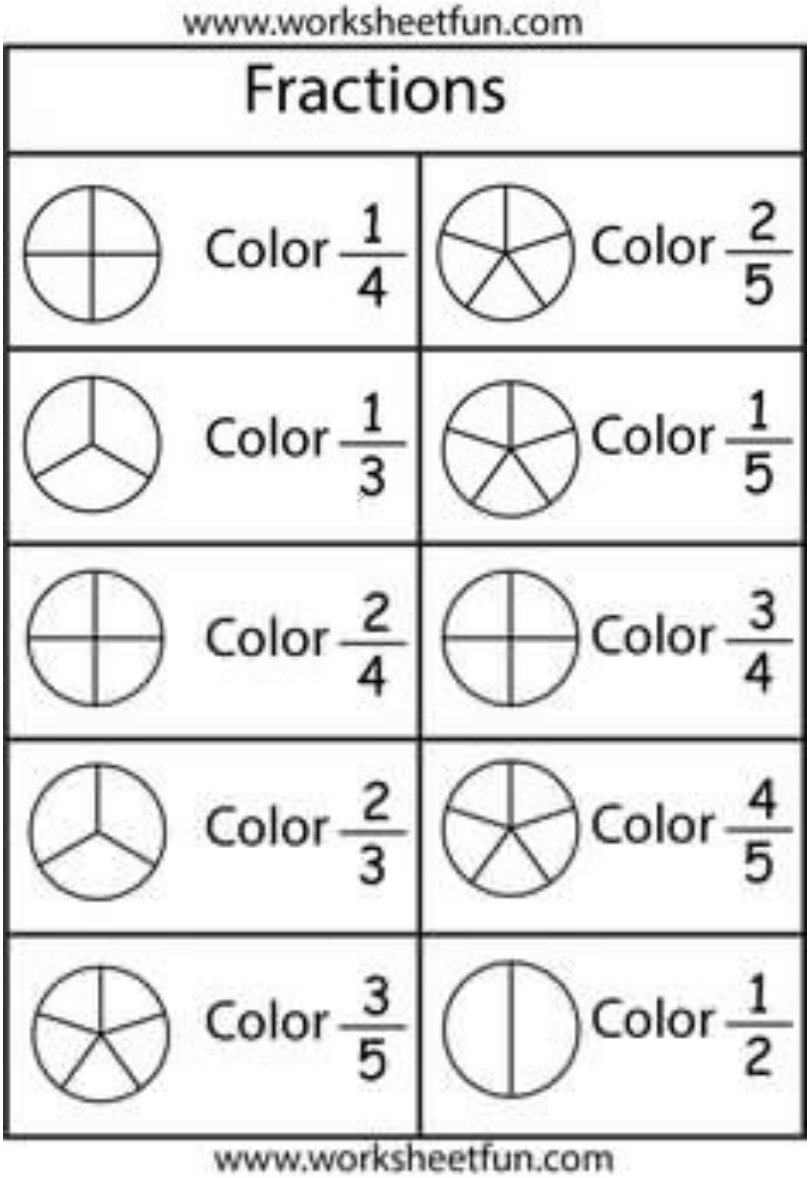
Write the fraction that equals the part that is shaded.



Follow the directions for each:



- Complete the following task.



https://s-media-cache-ak0.pinimg.com/236x/98/01/10/980110e5e4eb17fc162f381ff1626f75--st-grade-fractions-worksheets-summer-math-worksheets.jpg

Extension:

- Divide whole objects and sets of objects into equal parts, and identify the parts using fractional names (e.g., one half; three thirds; two fourths or two quarters), without using numbers in standard fractional notation.

*Use number lines to add, subtract & find equivalent fractions with like denominators.

7. Parts of Measures (Extension)

- What do you buy in a grocery store that is $\frac{1}{2}$ a liter?

.. _____

- Choose fractions (1/4, 1/2, 1/3) for a kilogram and a litre to help perform measurement tasks.
- Estimate, measure, and record the mass of objects (ie. can of apple juice, bag of oranges, bag of sand), using the standard unit of the kilogram or parts of a kilogram (e.g., half, quarter).
- Estimate, measure, and record the capacity of containers (ie., juice can, milk bag), using the standard unit of the litre or parts of a litre (ie.., half, quarter).

http://www.garmentprinterink.com/shop/media/wysiwyg/halflitercleaningspecial.jpg

C. Show Me the Money

Check-In (diagnostics)

Name _____ Date _____

Counting Canadian Coin Totals

Circle the coins that match the price.

1.  56 ¢

2.  27 ¢

3.  41 ¢

4.  80 ¢

http://www.teach-nology.com/worksheets/math/money/mon43.gif

8. Coins for Counting and Probability

RULE: We usually use the following Canadian coins: One penny = 1 cent; one nickel = 5 cents; one dime = 10 cents; 1 quarter = 25 cents; one dollar = 100 cents (loonie); two dollars (toonie) = 200 cents.

EXAMPLES:

2 Dollar Coin
*"**Toonie**"*

1 Dollar Coin
*"**Loonie**"*

50 Cent Coin

25 Cent Coin
*"**Quarter**"*

10 Cent Coin
*"**Dime**"*

5 Cent Coin
*"**Nickel**"*

1 Cent Coin
*"**Penny**"*

http://www.craigmarlatt.com/canada/images/symbols_facts&lists/coins.jpg

FUN & GAMES:

- Create an order from a menu but make the prices in either bears, loons, moose, schooners, beavers or maple leafs
- Put the totals in cents beside each.

Example: *Molly's Meal*

1. Hot dog: 2 bears (200 cents)
2. Macaroni and cheese: 3 moose (100 cents)
3. Salad: 1 loon (100 cents)
4. Bag of chips: 5 beavers (25 cents)
5. Lemonade: 7 schooners (70 cents)
6. 5 Grapes: 10 maple leafs (10 cents)

Extension: Add up the total for the meal in cents ☺

TECH CHECK:

- https://www.youtube.com/watch?v=3YX9egbUNX4 (Royal Canadian Mint tour)
- https://www.youtube.com/watch?v=DlEpif2f7N4

GOT IT!

- Complete the following:

Here are the Canadian coins:

This is called a _____
It is worth _____ _____

This is called a _____
It is worth _____ _____

This is called a _____
It is worth _____ _____

This is called a _____
It is worth _____ _____

This is called a _____
It is worth _____ _____

This is called a _____
It is worth _____ _____

https://s-media-cache-ak0.pinimg.com/originals/e3/b0/b3/e3b0b33a5bd882628904ee956a31d5c7.jpg

- Explain to your teacher the value of each coin (penny, nickel, dime, quarter, $1 coin, $2 coin).
- Using pennies, nickels and dimes, count forward by 1's, 2's, 5's, and 10's to 100.
- What do you notice about the size of the Canadian coins?
- Which coin do you think should be larger than it is?

I think the _____ coin should be larger than it is

because_____.

- Create a pattern of coins that repeats.

- Create a pattern of coins that gets larger.

- Create a pattern that gets smaller.

RULE: The likelihood of heads or tails when flipping a coin is equal.

EXAMPLES:

Heads or Tails

The front of a coin is called the 'head', while the back of the coin is called tails.

People sometimes flip coins.

- Talk about why you think they do this?

- What is probability?

Probability is the likelihood that an event will occur.

- If I throw a coin in the air what is the likelihood that it will and on 'heads'?

(a) Impossible
(b) Unlikely
(c) <u>equally likely</u>
(d) more likely
(e) certain

https://maycontainmaths.files.wordpress.com/2014/08/coin-flip3.jpg

FUN & GAMES: Spinner Action

- What do you think is the probability of spinning green when you spin a spinner that has one half shaded red, one fourth shaded blue, and one fourth shaded green?
- Experiment with the spinner to see if the results are what you expected.

http://www.educatorsoutlet.com/images//products/105865DD.jpg

GOT IT!

- Predict what will happen if you toss a coin in the air 5 times.
- How many times do you think it might land on 'tails'?

_____ times.

Extension:

*Solve problems by converting between decimals & base ten fractions

How well did I do these tasks?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

9. Got Enough Cash for Change?

ET - Estimate & make change using money.

RULE: It is important to over-estimate the cost of things so you have enough to pay the tax and have some change left over.

https://s-media-cache-ak0.pinimg.com/236x/ef/5a/50/ef5a5027e4f99711ae9658572afaa81b.jpg

- Record the colour of each bill?

$5	
$10	
$20	
$50	
$100	

REAL WORLD PROBLEM:

Mr. Rogers went shopping to buy a toy car. He spent $2.57 on a toy car, $2.69 on balloons, $3.54 on a kite and $1.95 on an umbrella. He gave the cashier a $20 bill.
Did Mr. Rogers have enough to buy all this?

With bills and coins, we figured out that Mr. Rogers was spending:

- Start with the bills:

Part 1 : 2+ 2 + 3 + 1 = 8 dollars

- Now check out the coins.

57 + 69 + 54 + 95 coins.

If we round it is about 60 +70 + 50 +100 cents.

- Then check out the coins:

Part 1: 60 + 70 = 130
Part 2: 50 + 100 = 150
Part 3: 130 + 150 =280
The coins are approximately 300 cents or $3.00.
Add this to the bills: $8 + $3 = $11.00
Mr. Rogers should have enough money to pay for these items.

- Take a look at this large bill:
-

http://www.canadaka.net/images/Canada%20$1000%20front.jpg

- Talk about how many grocery store visits would it take in a year to spend this bill?

RECIPROCAL TEACHING: Solving Money Problems

1. Using $100, explain and estimate what groceries you could buy with this money.
2. Share examples of your shopping list with a friend or family member.
3. Use scrap paper.
4. Have your friend or family member change places and replay what you taught.

TECH CHECK:

- http://www.ictgames.com/arrowcards.html
- http://www.sheppardsoftware.com/mathgames/placevalue/MatchingPV.swf
- https://ecdn.teacherspayteachers.com/thumbitem/Place-Value-Hundreds-Tens-and-Ones-Bingo-Math-Game-1459828233/original-334087-2.jpg

FUN & GAMES: Penny Estimate

- Fill a small jar full of pennies.
- Guess how many pennies there are in a jar.

My estimate is _____.

The actual value of the pennies was _____.

- Replace the pennies with 2 quarters.
- How many pennies do you still have left?

We counted them and we still have _____ pennies.

- Replace 20 pennies with 2 dimes.

We counted them and now have 2 quarters, 2 dimes and _____pennies.

- Replace 30 pennies with 6 nickels.

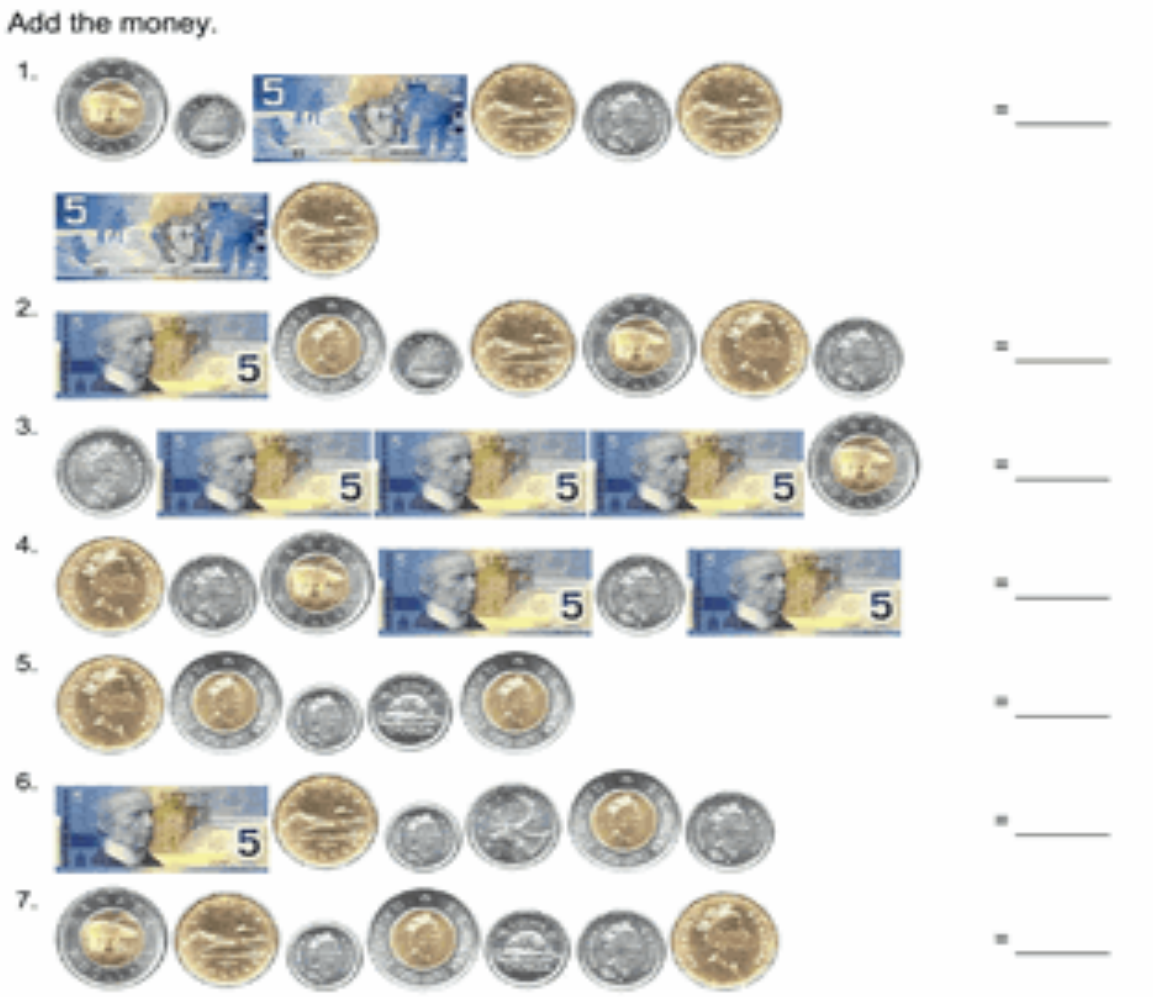
We counted them and now we have 2 quarters, 2 dimes, 6 nickels and _____ pennies.

37 Cent Scramble

- You saved up 37¢. Work with a partner to find as many combinations of coins that you have. List them on the whiteboard and compare your list with other lists.

GOT IT:

- Complete this task.



https://s-media-cache-ak0.pinimg.com/originals/26/18/06/261806e54a240837d0e5d5a9c2cc8ded.gif

Extension:

- Describe the relationships between coins and bills up to $10 (e.g., "There are eight quarters in a toonie and ten dimes in a loonie.")

- Estimate, count, and represent (using the $ symbol) the value of a collection of coins and bills with a maximum value of $10.

Extension:

- Add and subtract money amounts to make simulated purchases and change for amounts up to $10.

- You spent 5 dollars and 75 cents on one item and 10 cents on another item. How much did you spend in total?

How well did you estimate and make change using money?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

ET - Solve problems by using coins & paper money.

10. Solving Money Problems

RULE: Money problems can be solved with a good understanding of addition and subtraction.

EXAMPLE:

To raise funds to build an animal shelter, a class decided to open a lemonade stand during a busy day at the farm. They could sell lemonade for 10 cents a glass.

- *If they sold 10 glasses, how much would they make?*

Solution:

- Write down each time a glass of lemonade was sold until the they sold ten glasses:

10 cents
10 cents
10 cents
10 cents
10 cents
10 cents
10 cents
10 cents
10 cents
10 cents

100 cents

https://vignette2.wikia.nocookie.net/scribblenauts/images/4/4b/Lemonade_Stand.png/revision/latest?cb=20130302155130

Then count by 10's to add up the total amount they made. They made 100 cents, which is the same as $1.00.

REAL WORLD PROBLEM:

Donations for Animal Shelter

We know it is going to cost money to build a shelter, so we decided to write a letter to local businesses to ask them if they might donate materials. One store provided wood and nails that saved us $200. Another store provided paint that saved us another $70. Another store gave us a $50 gift certificate for animal feed. We have $75 set aside to buy our animals.

- How much money overall would this animal shelter project cost without the donations?

https://s-media-cache-

ak0.pinimg.com/736x/be/9c/8d/be9c8ddf8141359435l2c3b80340303f--field-shelters-goat-shelter.jpg

Extension:

One day the lemonade stand made $4.10 but we spent $1.50 to make the lemonade. How much profit did they make?

Money Magnets

In addition to selling lemonade for the animal shelter, the class decided to set up a wishing well for visitors to drop coins in. Students used the class magnet to pick up and count the money at the end of each week. How much money did the shelter make when students collected the following coins:

65 pennies
20 dimes
8 nickels
4 quarters
2 loonies
1 toonie

https://s-media-cache-ak0.pinimg.com/736x/89/12/5b/89125bdf0ea8a8c100390bbbc81d7359--early-years-maths-early-years-money.jpg

RECIPROCAL TEACHING: Solving Money Problems

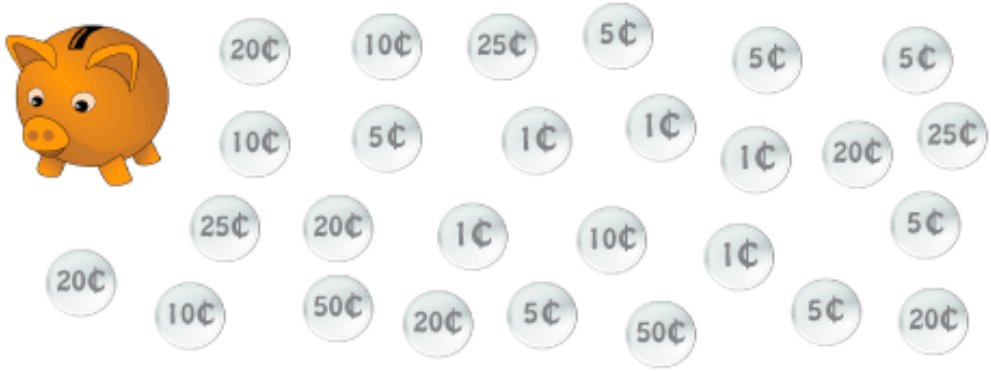
1. Using $100, explain and estimate what groceries you could buy with this money.
2. Share examples of your shopping list with a friend or family member.
3. Use scrap paper.
4. Have your friend or family member change places and replay what you taught.

GOT IT!

Coins in my Piggy Bank

Name: _____ Class: _____

Yesterday I emptied my piggy bank to see how much money I had saved this year. The following coins came out of it. Use the information to answer the questions



1) Complete the data table

1¢	5¢	10¢	20¢	25¢	50¢
51					

2) How many 5 cent coins did I have?

3) How many 25 cent coins did I have?

4) Which coin did I have the most of?

5) How many coins were worth more than 20 cents?

6) How many coins did I have in total?

http://www.mathinenglish.com/worksheetsimages/grade1/piggybankP1big.gif

banana	apple	orange	plum
			
5¢	12¢	10¢	6¢

1) What is the most expensive fruit? _____

2) How much do two oranges cost? _____

3) How much does a banana and a plum cost? _____

4) How much more does a plum cost than a banana? _____

5) Frazer has the coins below. Can he buy an orange and a plum?

6) Sally buys 3 bananas. How much money will it cost? _____

7) Newton has 3 dimes.

How much more money does he need to buy 4 oranges? _____

8) If I had 3 nickels, could I buy an apple? _____.

How much money would I have left? _____

http://www.math-salamanders.com/image-files/money-problems-1st-grade-sheet-3a.gif

How well did you solve problems by using coins and paper money?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

E. Part Arts

11. Visual Part Arts

FUN & GAMES: Symbol Parts

Many art forms are made up of many parts. Many Asian languages have parts that make up symbols or characters

Cantonese Language Characters

- Take a look at 0 to ten in the Cantonese language.
- Symbols in Cantonese are known as characters.
- Try making each number.
- Talk about each part of the characters.
- Which characters have only one part?

https://s-media-cache-ak0.pinimg.com/originals/b7/fe/a3/b7fea3b296e75434fefabefe9adc2e7f.jpg

Sculpture Parts

Many sculptures are made up re-cycled materials

If there are three tires overall in this creative planter (the denominator), then the numerator for the bottom blue tire is <u>1/3.</u>

https://s-media-cache-ak0.pinimg.com/736x/17/df/7c/17df7cf7817a6b73062f77f484cb7011--minion-craft-recycle-tires.jpg

- Look at how this sculpture was created from recycled watches.
- How many watches do you estimate the artists used in creating this piece of artwork?

http://www.niritlevav.com/wp-content/uploads/2015/09/2-Lord-of-the-Watches.jpg

- Talk about the car parts you recognize in this statue of a moose.

https://www.recyclart.org/wp-content/uploads/2015/09/recyclart.org-recycled-car-part-art-6-600x400.jpg

Extension:

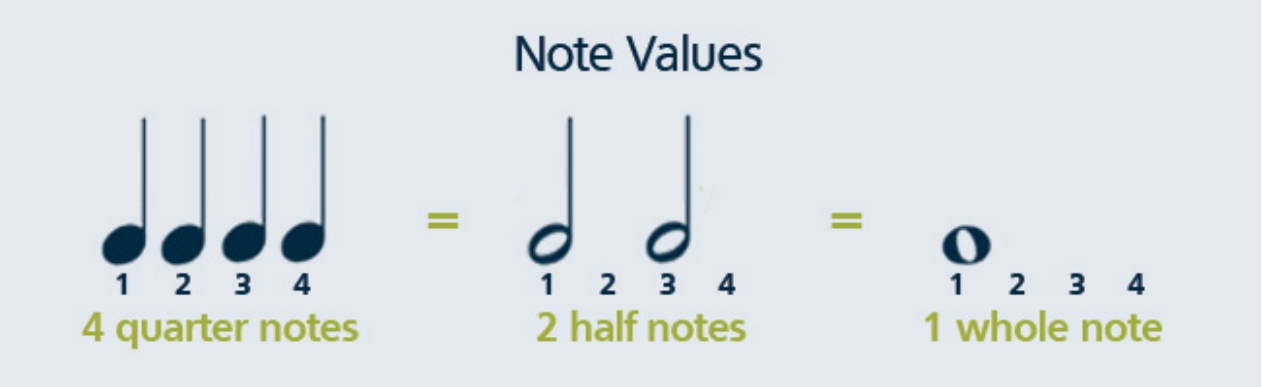
- What is the fraction of tires for each structure?

12. Musical Part Arts

RULE: The whole note in music lasts for about 4 seconds. The half note lasts for 2 seconds. The quarter note lasts about a second. An eighth note lasts about $\frac{1}{2}$ a second.

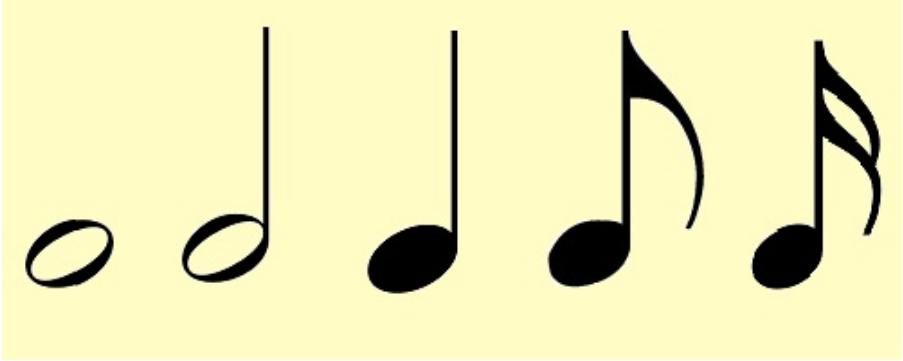
EXAMPLES:

Music uses fractions to make some notes last longer or shorter than others.



http://www.musicnotes.com/blog/wp-content/uploads/Note-Match-1.jpg

- Draw an arrow labelling each note
  (eighth note, whole note, half note, quarter note)



http://lossenderosstudio.com/img/musicnotes.jpg

Extension:

- What do you think the fifth note is? _____note

FUN & GAMES:

- Predict how many claps (quarter beats) it takes to walk around the school? Then time how long it takes. Compare your findings.

GOT IT!

- Look at the fraction below and record the name of the note it represents:

(a) $\frac{1}{4}$ _____note

(b) $\frac{1}{2}$ _____ note

(c) 1/1 _____note

What is the fraction of white keys to black keys on this accordion?
Step 1 – How many keys are there all together. (This will be your denominator)

https://ae01.alicdn.com/kf/HTB1137IlVXXXXccXXXXq6xXFXXX3/34-key-professional-piano-accordion-for-beginner-48-bass-Entry-level-keyboard-accordion-Factory-direct-sales.jpg

(a) white key fraction _____

(b) black key fraction _____

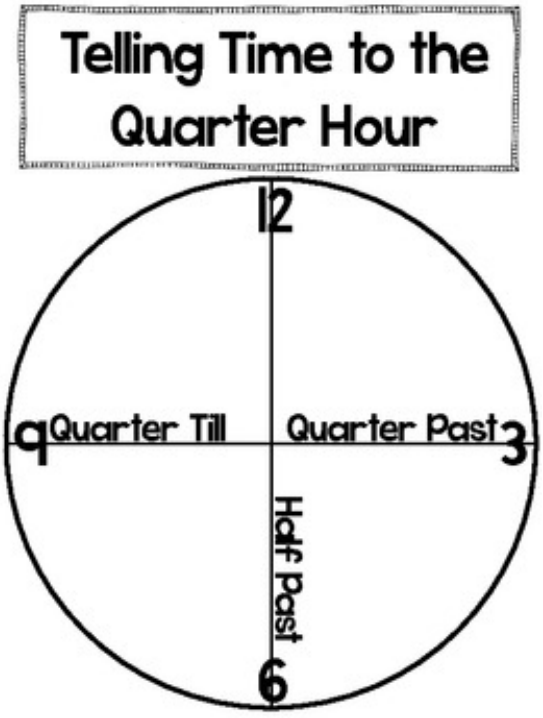
F. It's About Time

ET - Identify time as quarter to & quarter past the hour.

13. Quarter Hours

RULE: Time can be told to the hour, $\frac{1}{2}$ hour and $\frac{1}{4}$ hour. The clock is divided into quarters. When the large hand is at the 3, the time is 15 minutes "past" the hour; when the large hand is at the 9, the time is 45 minutes after the hour or "quarter to" the hour.

EXAMPLES:



https://ecdn.teacherspayteachers.com/thumbitem/Telling-Time-to-the-Quarter-Hour-Lesson-Plan-and-Showdown-Partner-Game-1457049672/original-668982-2.jpg

- What time do you eat:

Breakfast? _____

Lunch? _____

Dinner? _____

- What time do we start and end school?

Start: _____; End: _____

- What time is my bedtime? _____

- Predict how many flips of a sand timer will it take to complete a spelling quiz?

I predict it takes _____flips to complete a spelling quiz.

- Make a class list of things that take 15 minutes or a $\frac{1}{4}$ hour to do – and use the title (In 15 minutes we can…) or create an original title.

RECIPROCAL TEACHING: Telling Time

1. Using digital and analogue clocks, explain how to tell time to the hour, half hour and quarter hour.
2. Share examples of different clocks with a friend or family member.
3. Use scrap paper.
4. Have your friend or family member change places and replay what you taught.

FUN & GAMES:

Make Your Own Clock

1. Glue two plates together, one on top of the other, so your clock has a rim that's a different color from the face.
2. Stick the numbers 1-12 on one plate and 5,10,15, 20, 25, 30, 35, 40, 45, 50, 55 on the other plate.
3. Cut out the hour and minute hands and fasten to the center of the plate with a fastener.

http://www.muminthemadhouse.com/wp-content/uploads/2014/02/clocks.jpg

If you have time, you might want to make a snowman clock! Enjoy!

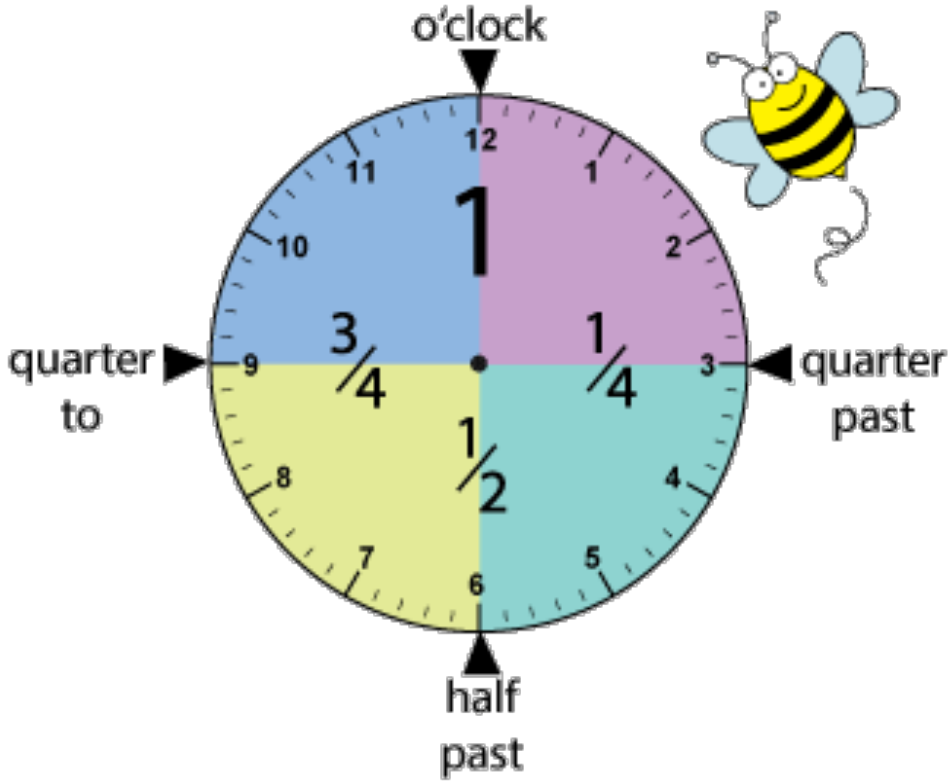
http://4.bp.blogspot.com/-ZyxJBfDQfRE/UPxf_TGs-7I/AAAAAAAAAvw/eeD1fJxOgCI/s640/Screen+shot+2013-01-20+at+4.21.24+PM.png

TECH CHECK:

- http://www.pbs.org/parents/crafts-for-kids/make-your-own-clock/
- http://www.softschools.com/time/learning_time_clock_for_kids/
- http://k8schoollessons.com/telling-time-quarter-to-activity-8/

GOT IT!

- Take a look at the clock below and place some hands on it to tell times that are quarter to or quarter past the hour.



http://www.kidseducationalresources.com/telling-the-time/Images/quarterclock.gif

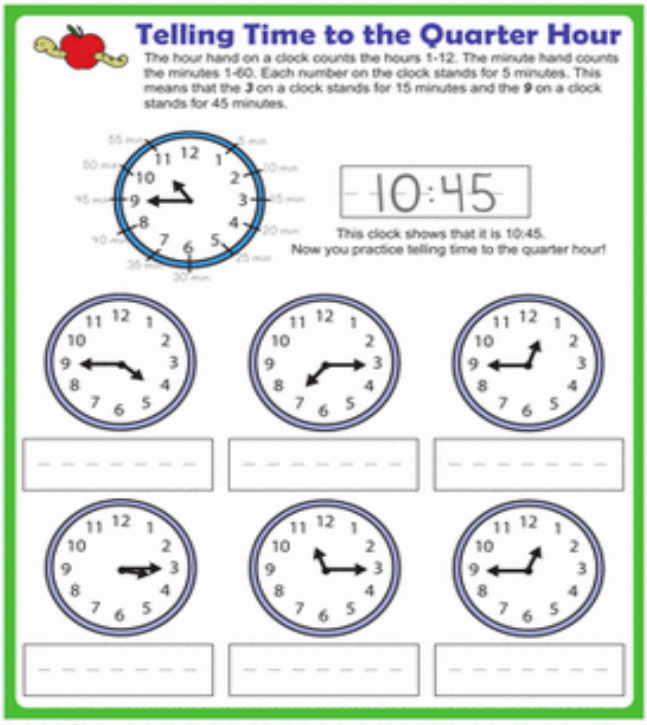
- How many seconds in a minute? _____
- How many minutes in an hour? _____
- How many hours in a day? _____
- How many days in a week? _____

With a calendar figure out….

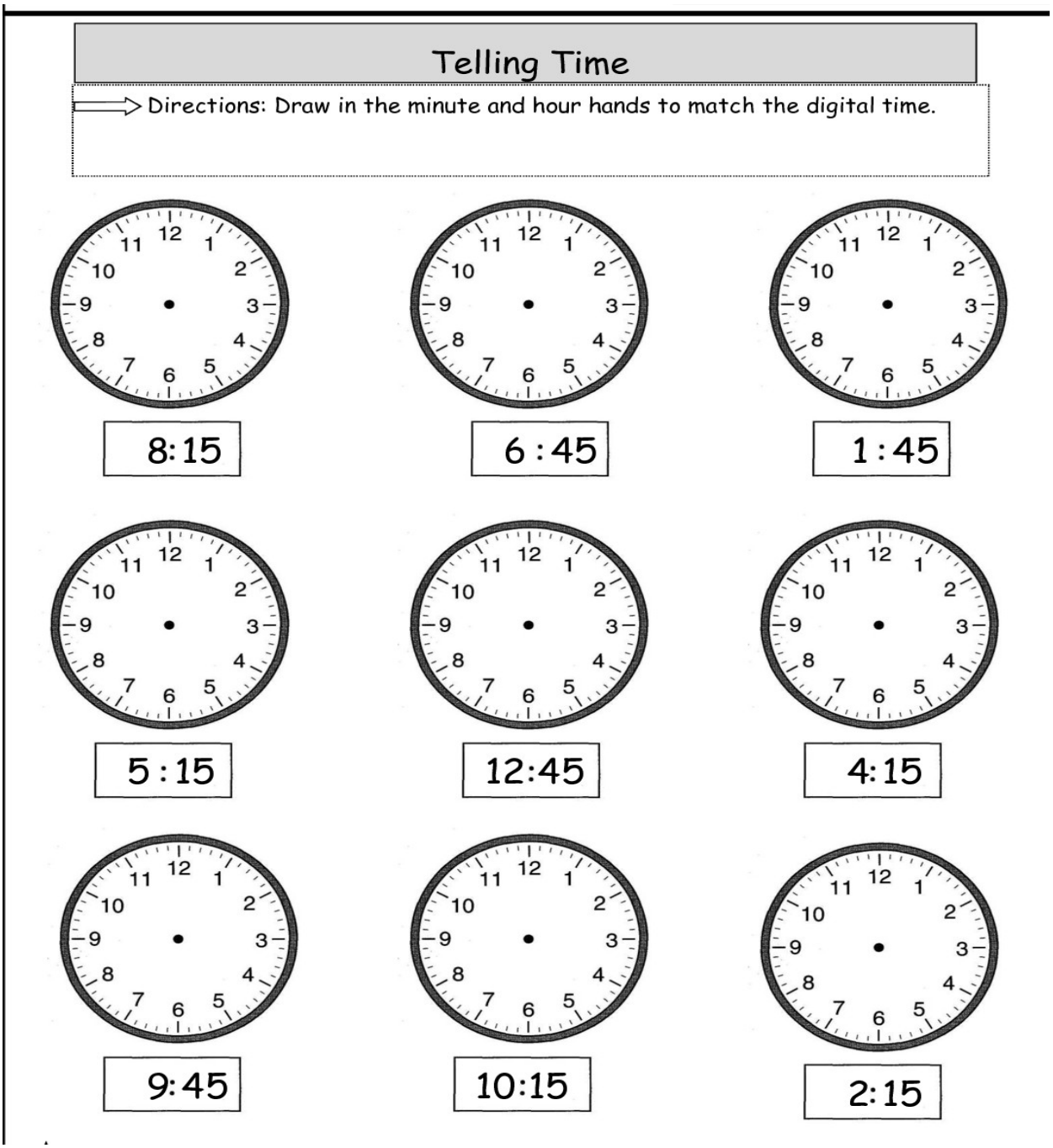
- How many weeks in a month? _____
- How many months in a year? _____
- How many weeks in a year? _____
- How many days in a year? _____
- Estimate the number of sleeps you get in a month._____

Extension:

- Show and explain how numbers 1, 10, 100, and 1000 link to a decade, a century and a millennium
- Complete the tasks below:



https://cdn.education.com/worksheet-image/540950/telling-time-quarter-hour-first.gif



https://s-media-cache-ak0.pinimg.com/originals/ee/1c/5b/ee1c5b1c4a2b5081fc4ef147e70bb37f.jpg

How well did you identify time as quarter to & quarter past the hour?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

14. Minute Master

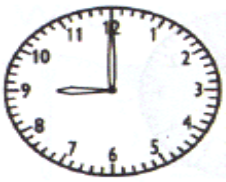
ET - Identify time using minutes.

RULE: Telling time to the minute and second is a precise measure. There are 60 minutes in an hour and 60 seconds in a minute.

http://www.skwirk.com/content/upload/images/Primary/NSW/year_4/maths/time/tp1/ch3/tp1ch3_image1.jpg

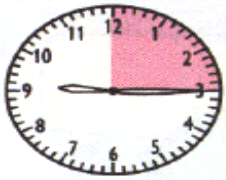
Looking at minutes as fractions, the clock has 60 parts or minutes – so each minute is 1/60 of a clock.

EXAMPLES:

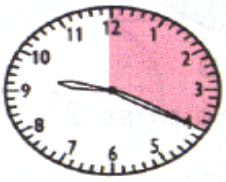


It is 9 o'clock.
9:00

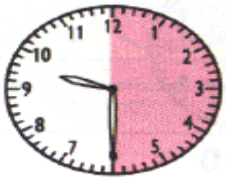
We read 9:15 as **nine fifteen**.
It is 15 minutes after 9 o'clock.



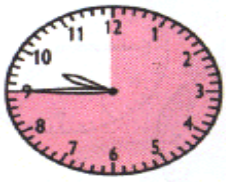
It is 15 minutes past 9.
9:15



It is 20 minutes past 9.
9:20



It is 30 minutes past 9.
9:30



It is 15 minutes to 10.
9:45

9:45 is **45** minutes after 9 o'clock.
9:45 is **15** minutes before 10 o'clock.

61

GOT IT!

- Use the pie plates to show your teacher 1 time from each row.

2:05	5:05	6:05
10:05	3:10	4:10
8:10	2:20	5:20
7:20	11:20	12:25
3:25	8:25	2:35
6:35	10:35	1:40
4:40	9:40	10:40
2:50	5:50	9:50
1:55	7:55	11:55

http://image.payloadz.com/products/1727429_2.png

- Record the times of these clocks on the line below each of them.

1. _____

2. _____

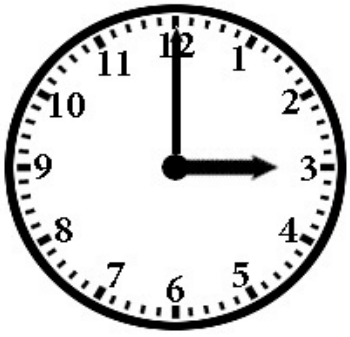
3. _____

4. _____

5. _____

6. _____

7. _____

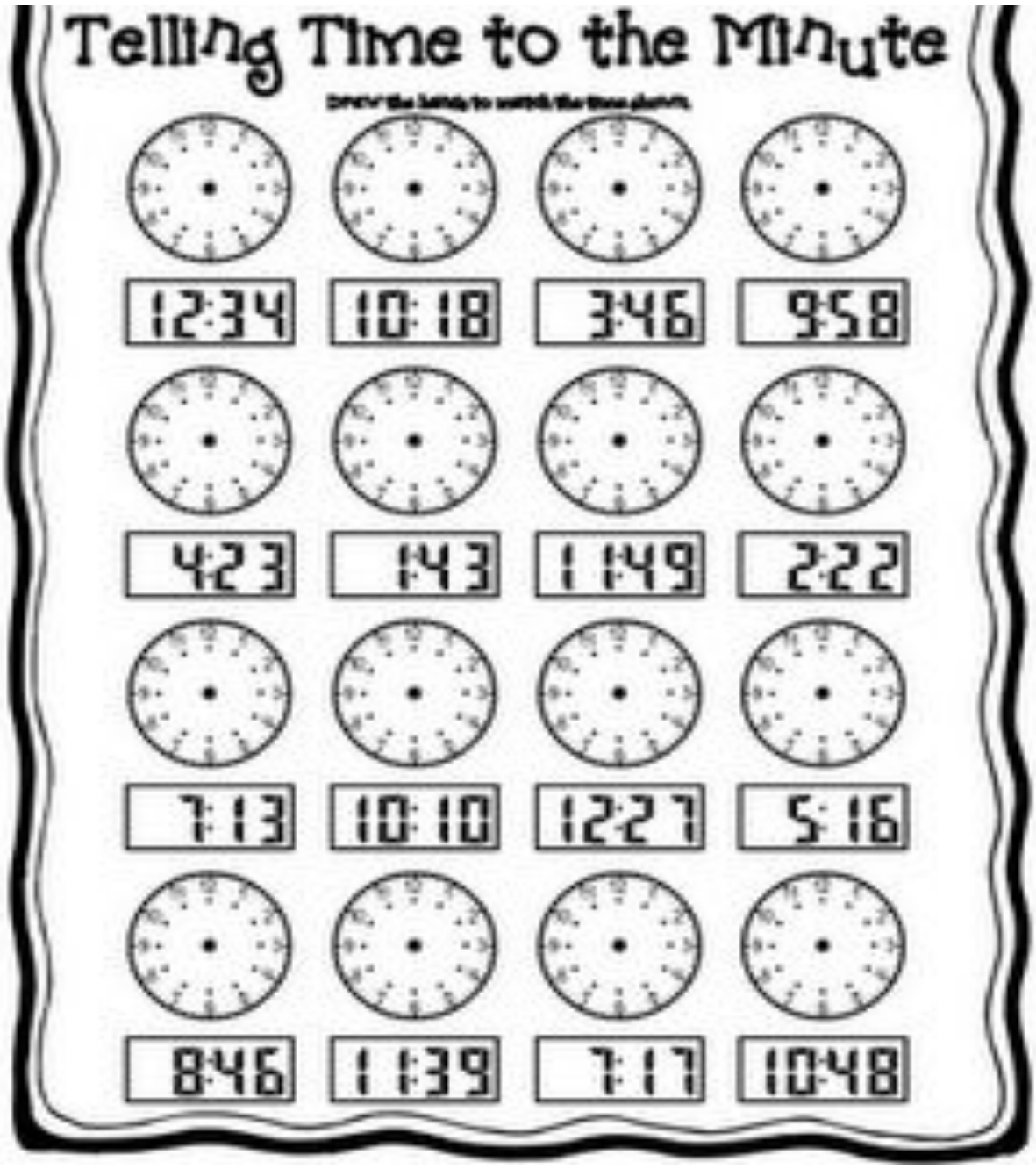


8. _____

9. _____

https://s-media-cache-ak0.pinimg.com/originals/14/4d/5f/144d5fbfe6d643275b2e211d7535c090.jpg

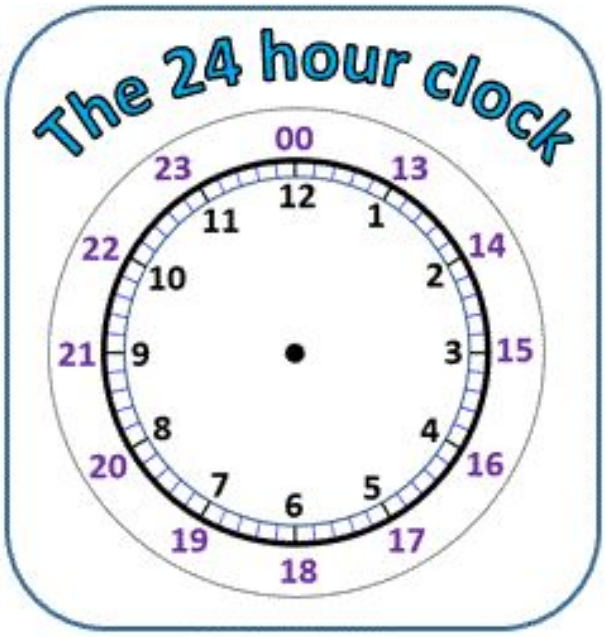
- Figure out these times to the minute:



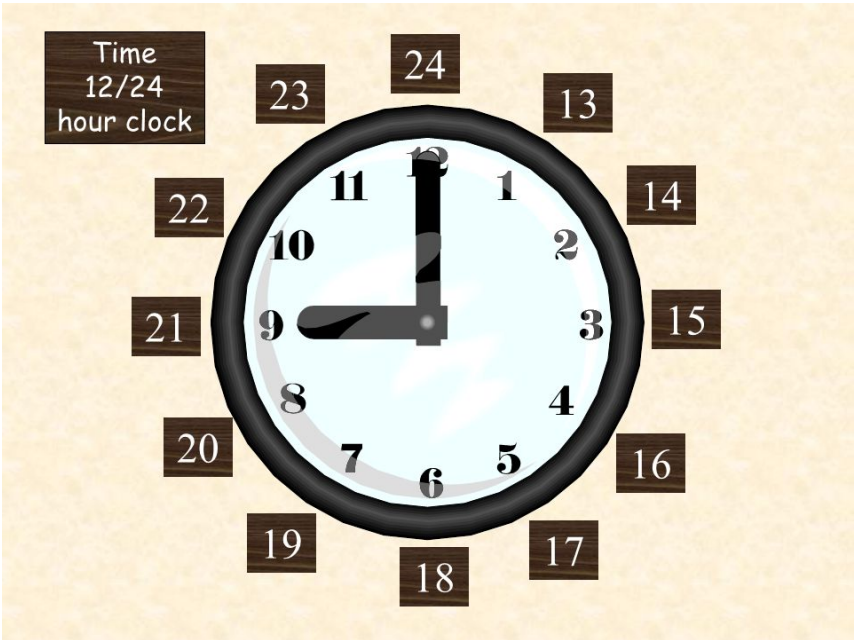
https://s-media-cache-ak0.pinimg.com/736x/54/74/50/5474508d0bba5b15de992df36af331dd--nd-grade-math-worksheets-clock-worksheets.jpg

RULE: You can tell time on a 12-hour clock or a 24-hour clock.

EXAMPLES:



https://s-media-cache-ak0.pinimg.com/736x/ba/f9/cc/baf9cc59cf1796c3cd2f60043a642596---hour-clock-maths.jpg



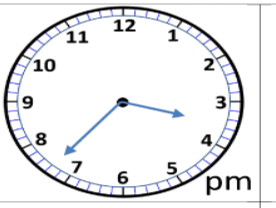
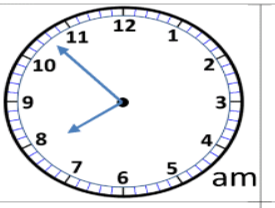
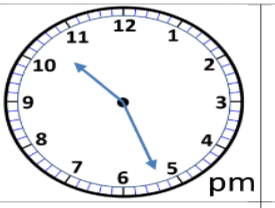
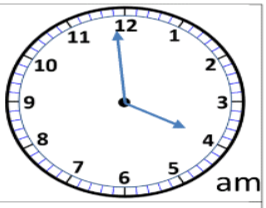
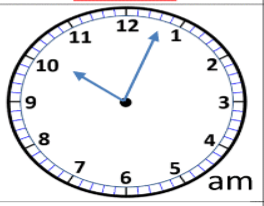
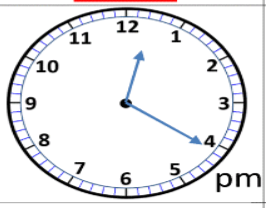
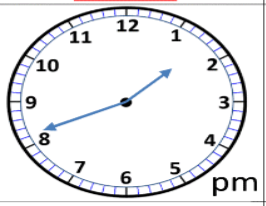
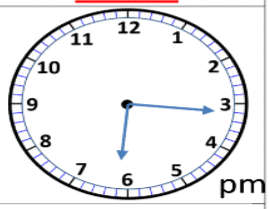
http://slideplayer.com/slide/5706872/18/images/3/Time+12/24+hour+clock+24+23+13+14+22+15+21+20+16+19+17+18.jpg

10 o'clock at night is also 22:00.

https://i.ytimg.com/vi/pcozCTWRgaw/maxresdefault.jpg

1)	1:24pm = 13:24	2)	2:56am = 02:56	3)	7:45pm = 19:45
4)	5:16am = 05:16	5)	3:56pm = 15:56	6)	12:25pm = 12:25
7)	11:27pm = 23:27	8)	8:13pm = 20:13	9)	12:42am = 00:42

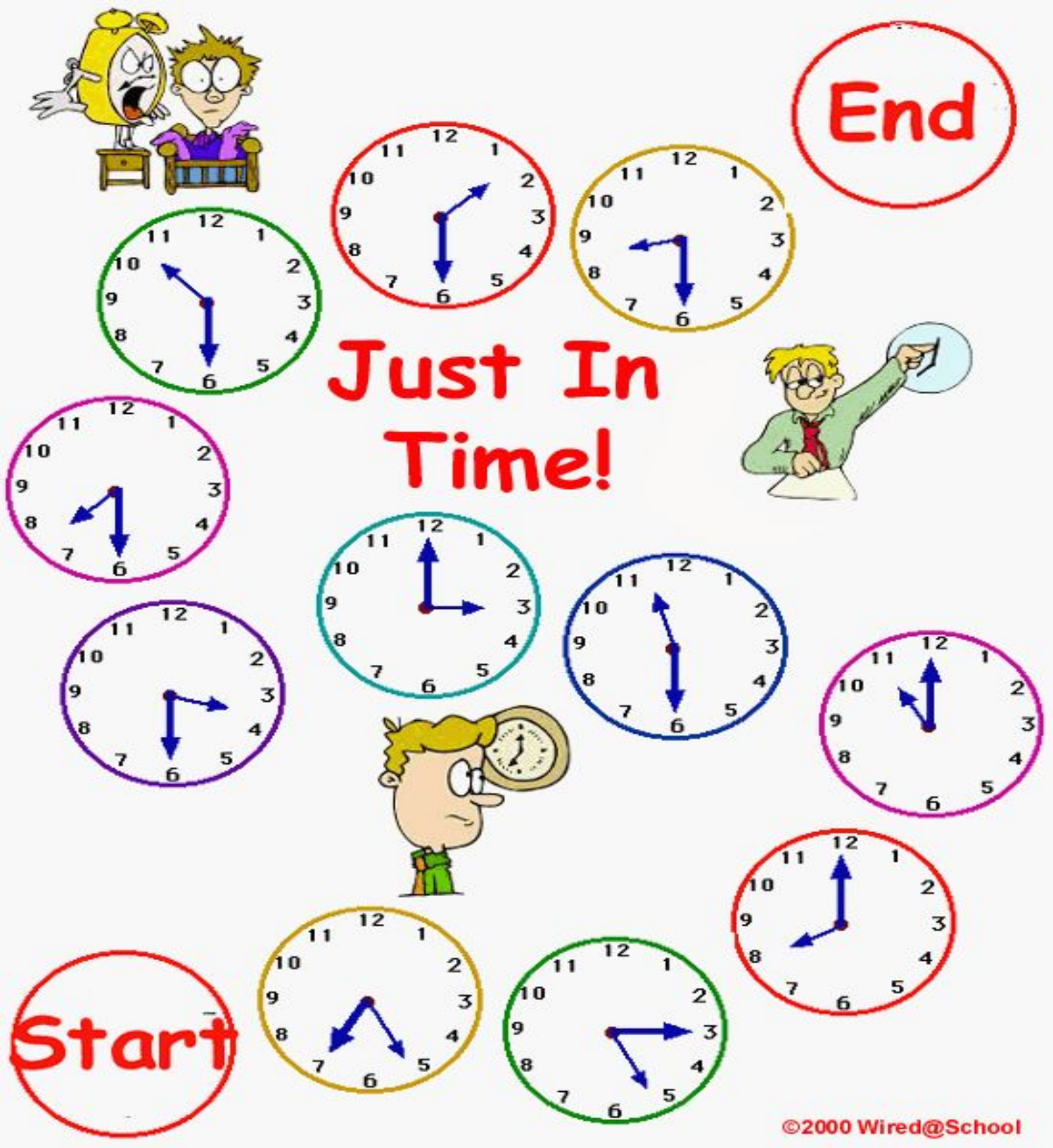
1)	13:41 = 1:41pm	2)	17:50 = 5:50pm	3)	04:32 = 4:32am
4)	12:36 = 12:36pm	5)	23:25 = 11:25pm	6)	08:53 = 8:53am
7)	00:51 = 12:51am	8)	19:08 = 7:08pm	9)	15:39 = 3:39pm

 pm	 am	 pm	 am
15:37	07:48	22:27	03:59
 am	 pm	 pm	 pm
10:03	12:21	13:41	18:16

http://www.math-salamanders.com/image-files/military-time-conversion-24-hour-clock-3ans.gif

FUN & GAMES: Just in Time

- Use a stopwatch to time how long it takes to get through saying each spot.
- Try it again and see if you can reduce your time.



https://s-media-cache-ak0.pinimg.com/736x/d8/52/ce/d852ce3114f97a36ab5464be129940dc.jpg

Extension:
*Solve elapsed time word problems, using time lines

RECIPROCAL TEACHING: Telling Time

1. Using digital and analogue clocks, explain how to tell time to the minute with 12 and 24-hour clocks.
2. Share examples of different clocks with a friend or family member.
3. Use scrap paper.
4. Have your friend or family member change places and replay what you taught.

GOT IT!

- Look at the 24-hour clock examples and figure out these times:

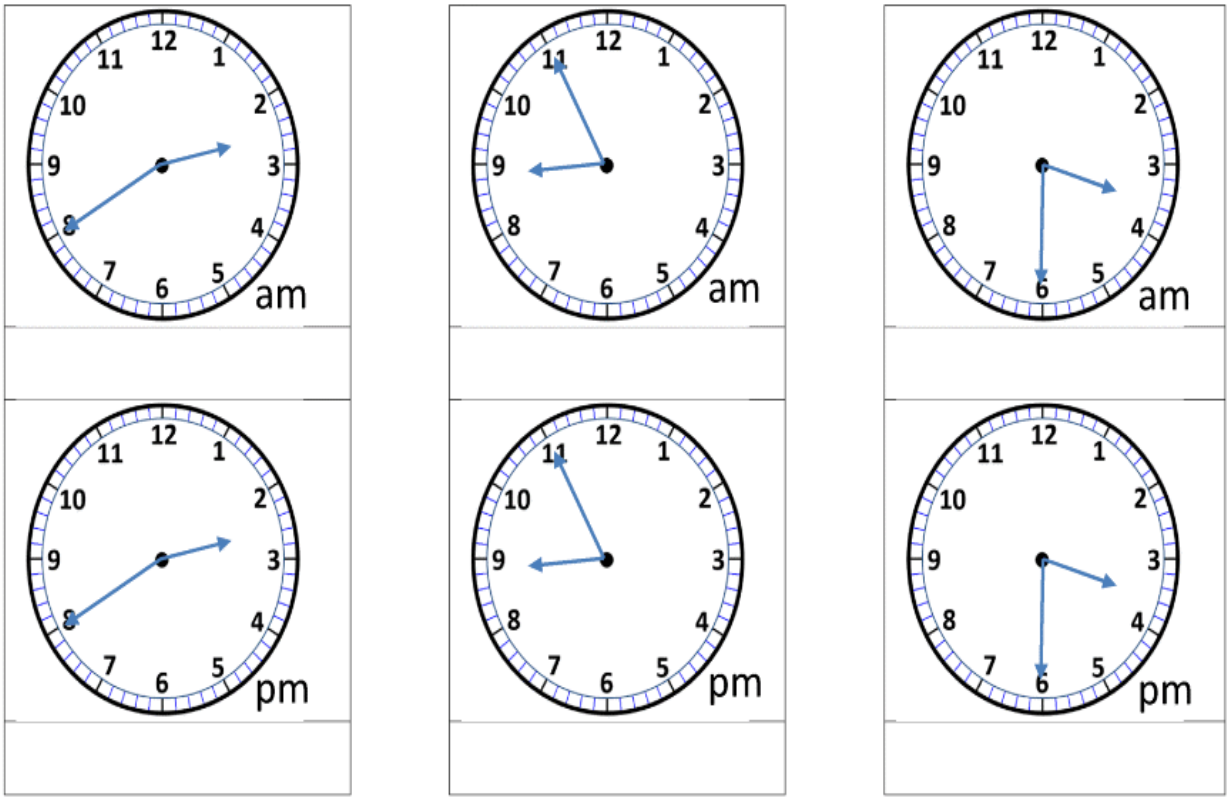
http://splash.abc.net.au/splash-image-servlet/mvcservlet/imageServlet/profile2/ESACOL-L9642

1) Convert these times into 24 hour clock times.

12 hour	24 hour
3:25am	03:25
7:20am	
8:05am	
12:20am	
1:16am	
4:56am	
10:42am	
12:51am	

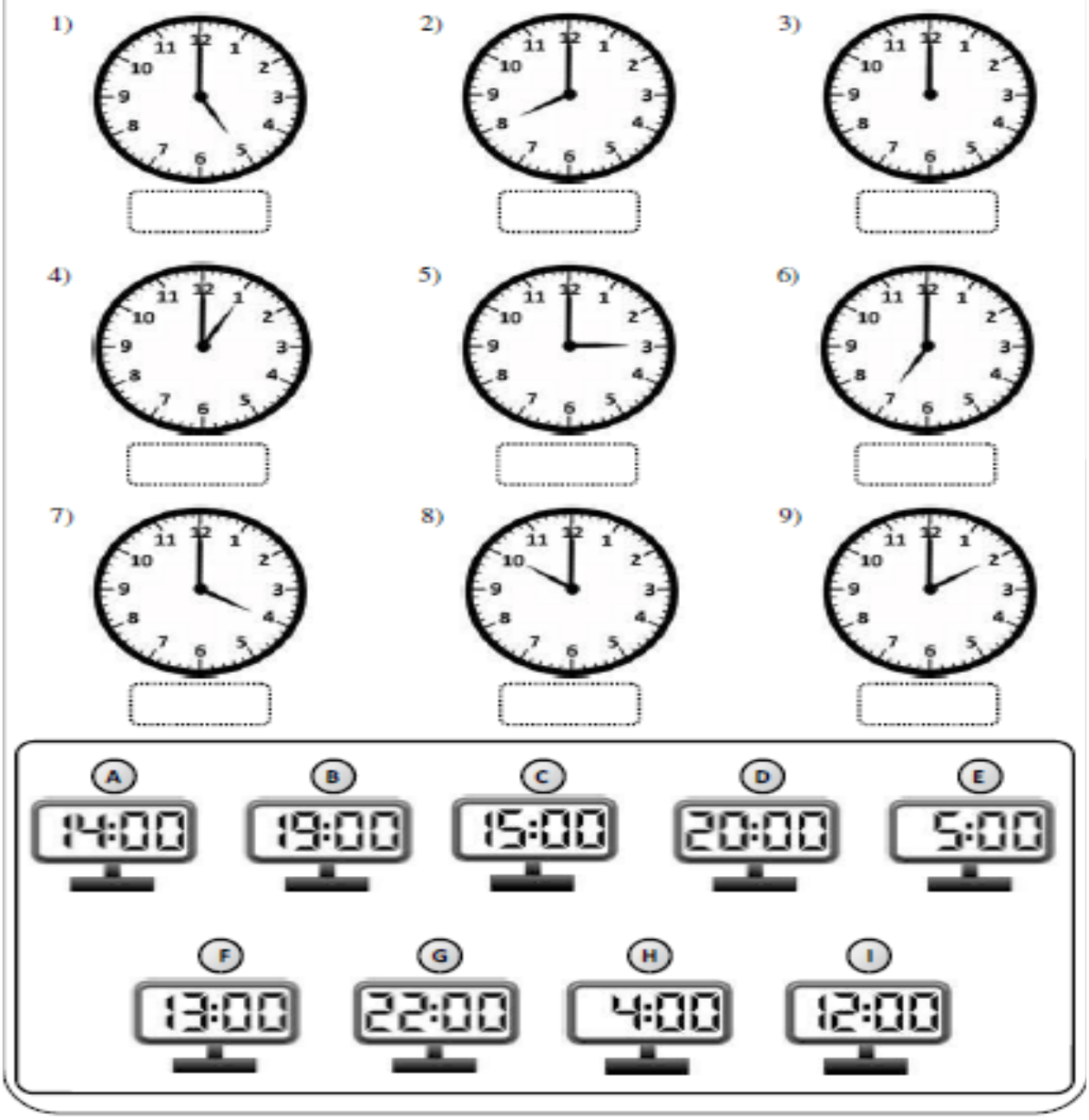
12 hour	24 hour
3:25pm	
7:20pm	
8:05pm	
12:20pm	
1:16pm	
4:56pm	
10:42pm	
12:51pm	

2) Convert the times on these clock faces into 24 hour clock times.



http://www.math-salamanders.com/image-files/24-hour-clock-conversion-12-to-24-hour-clock-2.gif

Write the correct alphabet below each analog clock that shows the same time in digital clock.



https://www.mathworksheets4kids.com/time/clock/comparing-large.png

How well did you identify time using minutes?	Like a Trailblazer (expert)	Like a Pathfinder (apprentice)	Like a rookie (need more help & practice)

BIG THINK

Date: _____

Dear Math Teacher,

I have completed my first year of Primary Part Numbers.

Did I make any mistakes? _____
Did I learn from making mistakes? _____

I am proudest about the work I did on page ___ because….

I think the trickiest part of this Math was….

because….

I enjoyed working (with others or on my own) because….

Yours in mathematics,

_____ (name)

Your Math Learning Log:

____ You used a ruler to underline steps.

____ You did rough work in spaces easy to find.

____ You did work that was neat and easy to read.

____ You tried using the examples as patterns.

____ You drew at least three pictures of "doing math" in your learning journal (where you reflect on learning in each subject area each week)

Classroom Work	
Worked well on task with other students during paired or group activity	
Worked on own without disruption	
Helped others when needed	
Contributed well to classroom discussions	
Opted to do optional activities	
TOTAL (up to 10 points)	

Appendix A:
Ontario Ministry of Education and Training Expectations

1A.1.5 identify and describe various coins (i.e., penny, nickel, dime, quarter, $1 coin, $2 coin), using coin manipulatives or drawings, and state their value

1A.1.6 represent money amounts to 20¢, through investigation using coin manipulatives

1A.1.7 estimate the number of objects in a set, and check by counting

1A.1.8 compose and decompose numbers up to 20 in a variety of ways, using concrete materials

1A.1.9 divide whole objects into parts and identify and describe, through investigation, equal-sized parts of the whole, using fractional names

1A.2.2 count forward by 1's, 2's, 5's, and 10's to 100, using a variety of tools and strategies

1A.3.3 add and subtract money amounts to 10¢, using coin manipulatives and drawings.

1B.1.6 estimate, measure, and describe the passage of time, through investigation using nonstandard units

1B.1.7 read demonstration digital and analogue clocks, and use them to identify benchmark times and to tell and write time to the hour and half-hour in everyday settings

2A.1.3 compose and decompose two-digit numbers in a variety of ways, using concrete materials

2A.1.4 determine, using concrete materials, the ten that is nearest to a given two-digit number, and justify the answer

2A.1.5 determine, through investigation using concrete materials, the relationship between the number of fractional parts of a whole and the size of the fractional parts

2A.1.6 regroup fractional parts into wholes, using concrete materials — compare fractions using concrete materials, without using standard fractional notation

2A.1.7 estimate, count, and represent (using the ¢ symbol) the value of a collection of coins with a maximum value of one dollar.

2A.3.5 add and subtract money amounts to 100¢, using a variety of tools

2B.1.8 tell and write time to the quarter-hour, using demonstration digital and analogue clocks

2D.1.3 identify repeating, growing, and shrinking patterns found in real-life contexts

2D.1.5 create growing or shrinking patterns (Sample problem: Create a shrinking pattern using cut-outs of pennies and/or nickels, starting with 20 cents.

2E.3.1 describe probability as a measure of the likelihood that an event will occur, using mathematical language

2E.3.2 describe the probability that an event will occur, through investigation with simple games and probability experiments and using mathematical language

Extensions

3A.1.5 round two-digit numbers to the nearest ten, in problems arising from real-life situations

3A.1.6 represent and explain, using concrete materials, the relationship among the numbers 1, 10, 100, and 1000

3A.1.7 divide whole objects and sets of objects into equal parts, and identify the parts using fractional names, without using numbers in standard fractional notation

3A.1.8 represent and describe the relationships between coins and bills up to $10

3A.1.9 estimate, count, and represent (using the $ symbol) the value of a collection of coins and bills with a maximum value of $10

3A.3.4 add and subtract money amounts, using a variety of tools, to make simulated purchases and change for amounts up to $10

3B.1.8 choose benchmarks for a kilogram and a litre to help them perform measurement tasks; – estimate, measure, and record the mass of objects, using the standard unit of the kilogram or parts of a kilogram; – estimate, measure, and record the capacity of containers, using the standard unit of the litre or parts of a litre

3B.2.6 solve problems involving the relationships between minutes and hours, hours and days, days and weeks, and weeks and years, using a variety of tools

3E.2.3 demonstrate an understanding of mode, and identify the mode in a set of data.

3E.3.1 predict the frequency of an outcome in a simple probability experiment or game, then perform the experiment, and compare the results with the predictions, using mathematical language

Appendix B:
Alberta Education Mathematics Expectations

Grade 1
1A.9. Demonstrate an understanding of addition of numbers with answers to 20 and their corresponding subtraction facts, concretely, pictorially and symbolically, by:
• using familiar mathematical language to describe additive and subtractive actions
• creating and solving problems in context that involve addition and subtraction
• modelling addition and subtraction, using a variety of concrete and visual representations, and recording the process symbolically.

1A.10. Describe and use mental mathematics strategies, such as:
• counting on and counting back
• making 10
• using doubles
• thinking addition for subtraction for basic addition facts and related subtraction facts to18.

**Understand and apply strategies for addition and related subtraction facts to 18.
Recall addition and related subtraction facts to 5
.
1B.1 Demonstrate an understanding of repeating patterns (two to four elements) by:
• describing
• reproducing
• extending
• creating patterns using manipulatives, diagrams, sounds and actions.

1B.2. Translate repeating patterns from one representation to another.

1B.4. Describe equality as a balance and inequality as an imbalance, concretely and pictorially (0 to 20).

1B.5. Record equalities, using the equal symbol.

Grade 2
•creating and solving problems that involve addition and subtraction

2A.10.Apply mental mathematics strategies, such as:
•using doubles
•making 10
•one more, one less
•two more, two less
•building on a known double
•thinking addition for subtraction for basic addition facts and related subtraction facts to 18.

2B.1. Demonstrate an understanding of repeating patterns (three to five elements) by:
•describing
•extending
•comparing
•creating patterns using manipulatives, diagrams, sounds and actions.

2B.2. Demonstrate an understanding of increasing patterns by:
•describing
•reproducing
•extending
•creating numerical (numbers to 100) and non-numerical patterns using manipulatives, diagrams, sounds and actions.