MEASUREMENT & DATA

NONSTANDARD, STANDARD, TIME, GRAPHING

hands on lessons and activities for the primary grades

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IN THIS UNIT :

NONSTANDARD MEASUREMENT:

- 4 hands on lessons
- 8 explanation tasks
- 12 measurement task cards
- 4 practice pages

TIME:

- 4 hands on lessons
- 3 different time sorts
- 12 time task cards
- 4 practice pages

STANDARD MEASUREMENT:

- 4 hands on lessons
- 16 measurement word problems
- 12 measurement task cards
- 4 practice pages

DATA & GRAPHING:

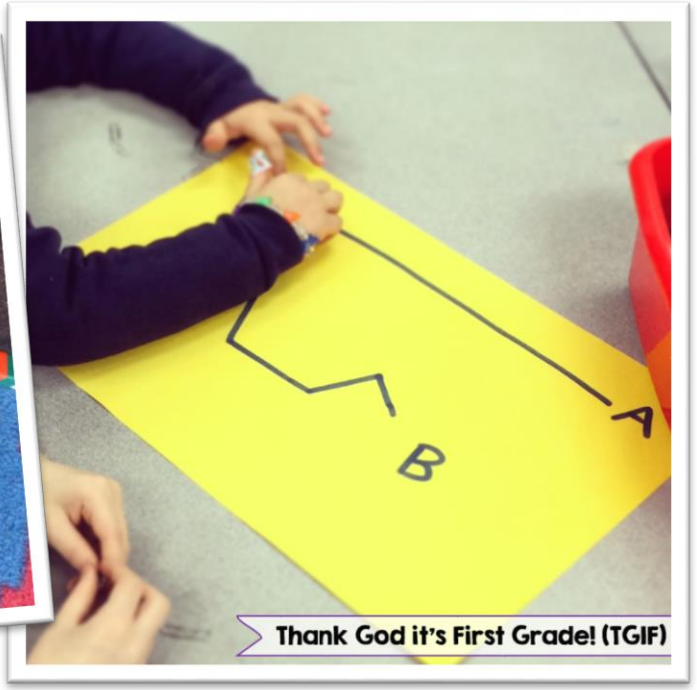
- 5 hands on lessons
- 12 graphing and data task cards
- 4 practice pages

NONSTANDARD MEASUREMENT:

OBJECTIVES:

Students will be able to:

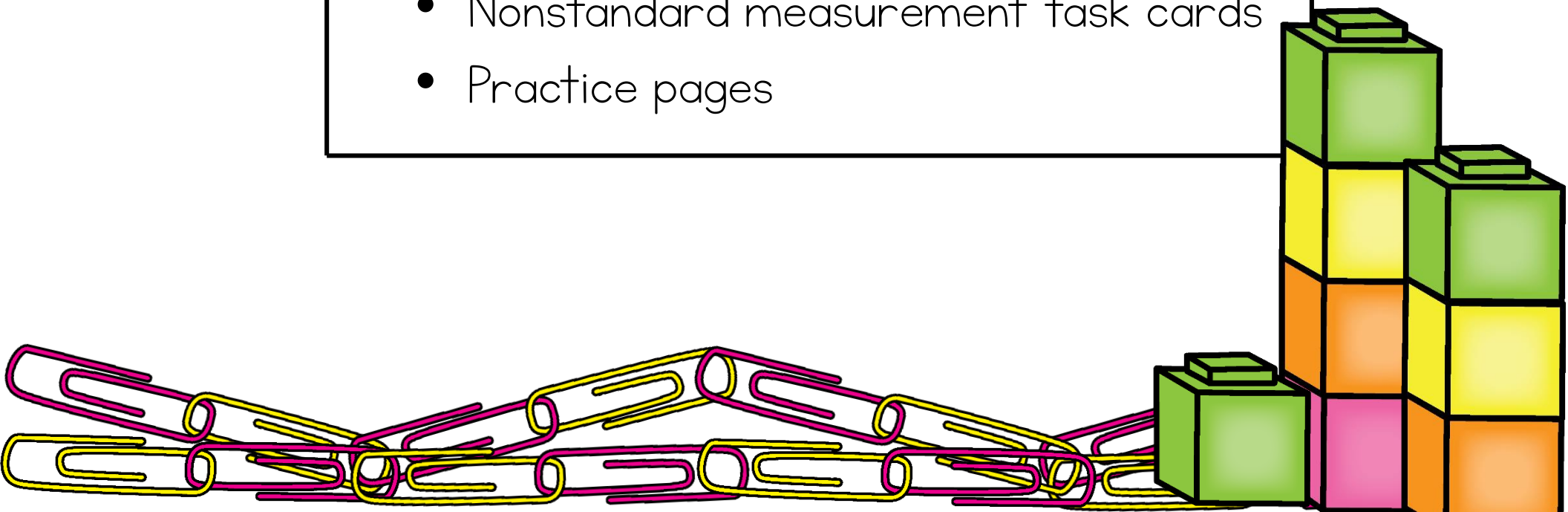
- Order 3 objects by length.
- Compare lengths of objects accurately.
- Express the length of an object as a whole number of units.
- Measure something accurately with no gaps, spaces, or overlaps.



NONSTANDARD MEASUREMENT:

LESSONS:

- Car and Ramp Races
- Stringy Shapes
- Crooked Paths
- Measure me!
- What's wrong? - explanation tasks
- Nonstandard measurement task cards
- Practice pages



LESSON I.

CAR & RAMP RACES!

Students will practice measuring with nonstandard tools during this fun lesson! I put students into small groups and give them three toy cars (they always have packs at the dollar store). I then ask my students to build a ramp using a clipboard. One at a time, students will race the cars down the ramp and mark where each lands with a post-it. Students will then measure how far each car went, record, and compare.

TIPS:

- During my modeled lesson I am sure to point out how we will measure from the end of the clipboard to the beginning of the post it.
- I let my students build their own ramps and when they complete one round (all 3 cars) they are allowed to build a different ramp and repeat.
- I also let my students choose which type of measurement tool they would like to use as long as they are sure to use the SAME tool throughout.

LESSON 5.

WHAT'S WRONG?

Students will take a look at each of these cards and explain what is wrong (and how they could fix it) in each picture. This lets students discuss and talk about math while explaining their thinking.

TIPS:

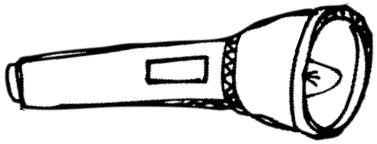
- We use these cards a lot for "math talks" at the beginning of our math block. They get our brains warmed up!
- I have my students practice discussing a few of these before they begin to write their response.

HOW MANY BLOCKS? NAME: _____

Look at the objects below, color in and record how many blocks long each object is.

_____

_____



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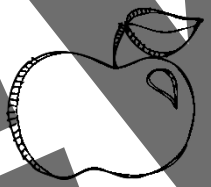

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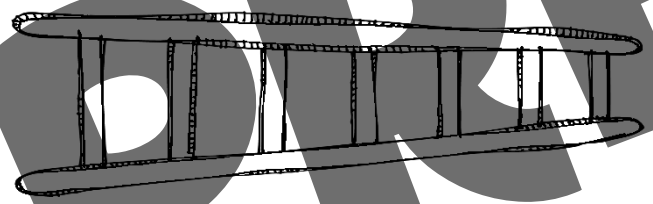


_____

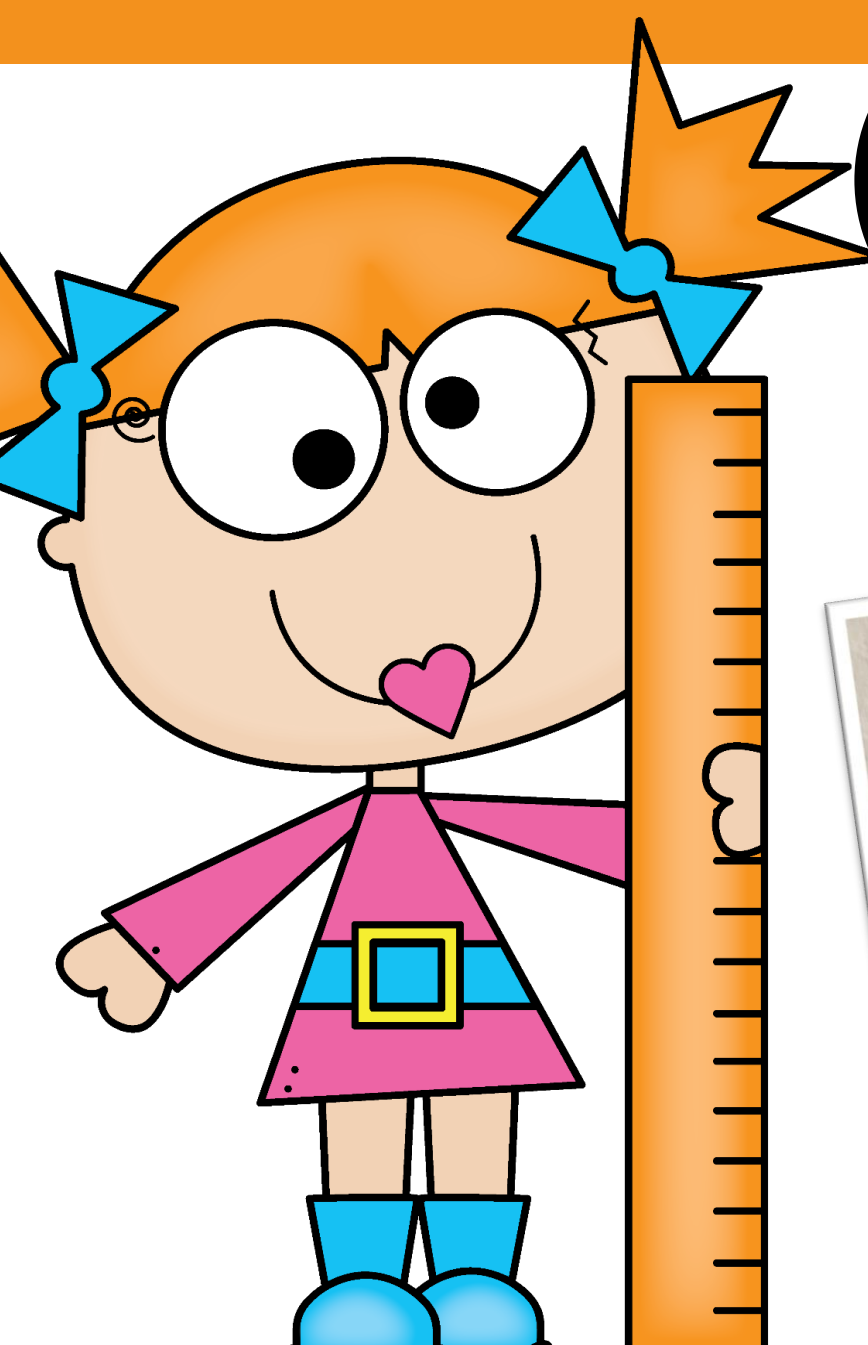
_____

PREVIEW

Put the objects in order from *shortest to longest:*

1.
2.
3.
4.
5.
6.

STANDARD MEASUREMENT :



OBJECTIVES :

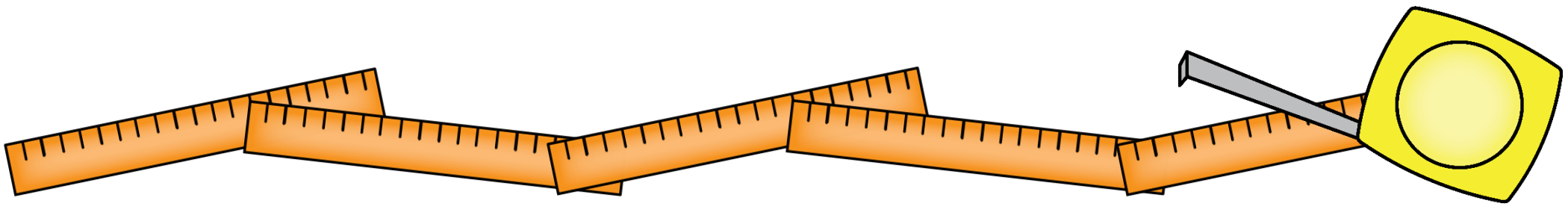
Students will be able to:

- Measure accurately with different tools.
- Estimate lengths using inches, feet, and centimeters.
- Compare lengths of different items using standard measurements.

STANDARD MEASUREMENT :

LESSONS:

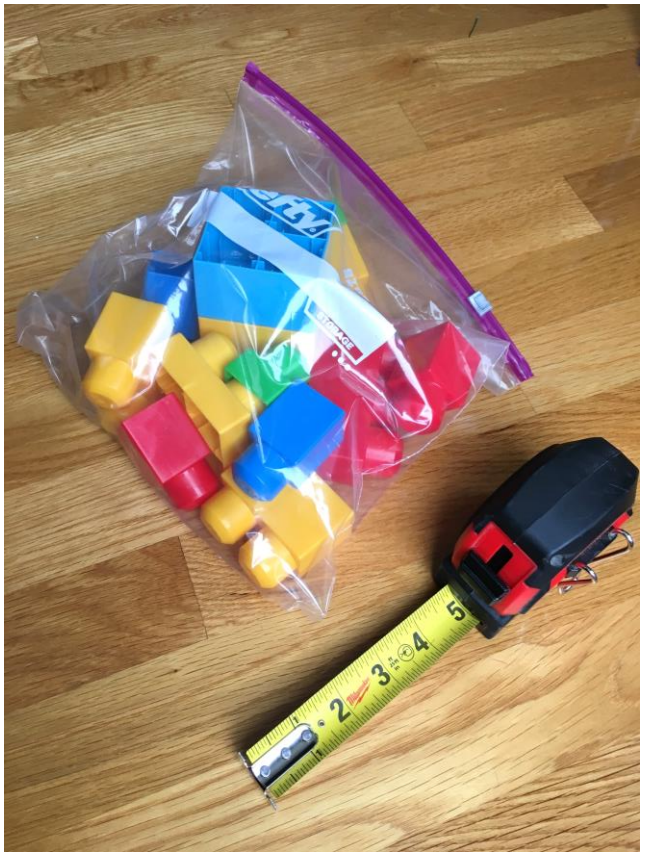
- We Rule the Room
- Block Towers
- Leaping Lizards!
- Pick the Tool
- What's wrong? - explanation tasks
- Standard measurement task cards.
- Practice pages.

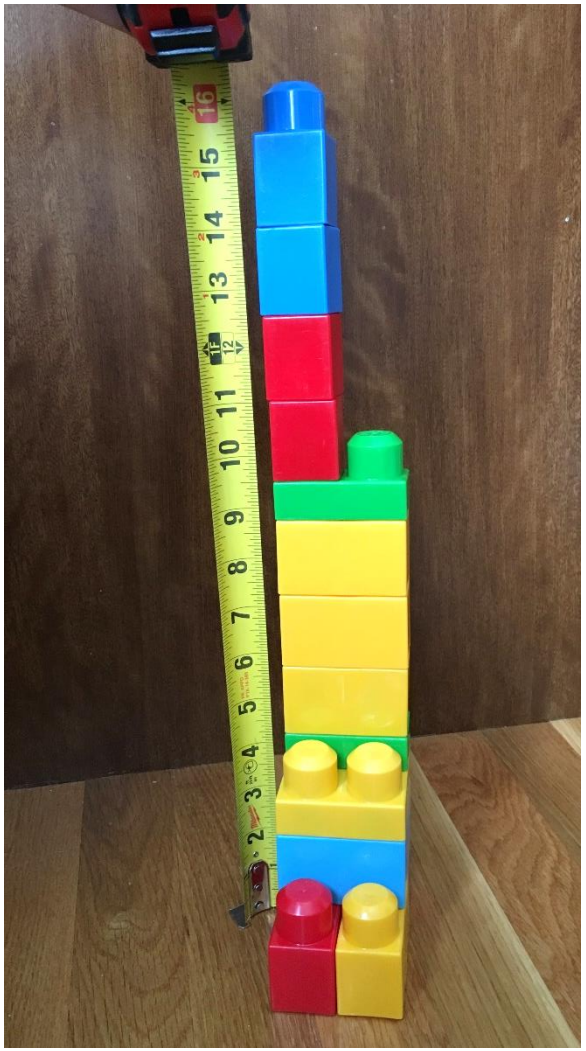


LESSON 2.

BLOCK TOWERS

For this lesson, I simply put a bunch of blocks (Legos, Duplos, Mega Blocks, etc.) in a plastic bag. I challenge my students to build the largest tower they can. Once they have built their tower, my students use a measuring tape to see how tall their tower is! Once all students towers are built, we bring them to the mat, share our results and order the towers from shortest to tallest.





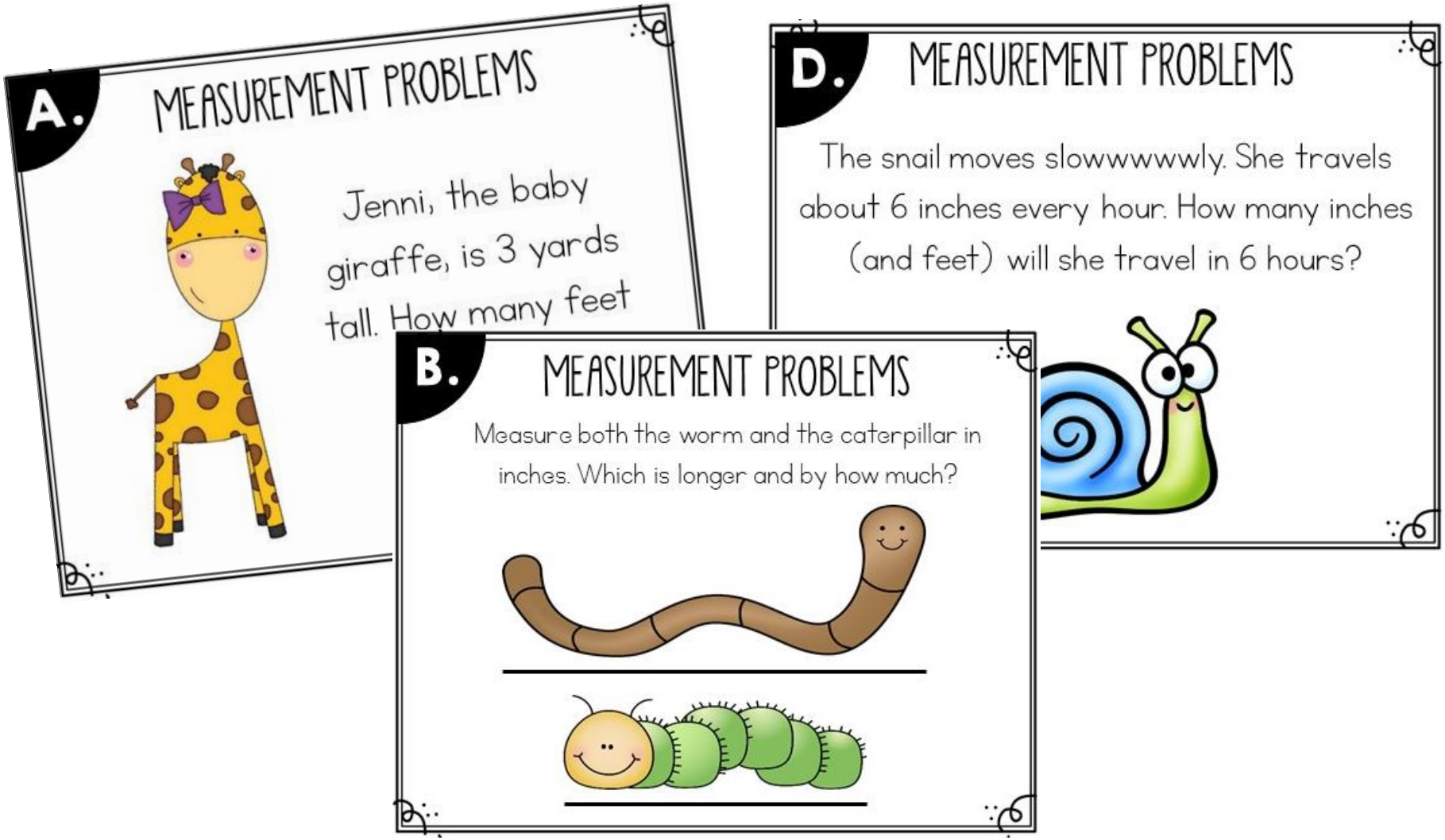
TIPS:

- If Legos or Duplos aren't available, any connecting blocks will work!
- .During my modeled lesson, I share how to properly measure with a measuring tape.

LESSON 5.

MEASUREMENT PROBLEMS

Students will solve mathematical problems based on what they have learned about measuring, addition, and subtraction. Students will get the chance to explain and show their thinking.



TIPS

- These can be great for small group instruction as some are more difficult than others and require more teacher-led instruction.

STANDARD TASK CARDS

These task cards are simple ways to have students practice measuring with standard units. Once you have taught the correct ways to measure and gone through some other, more guided lessons, students can complete these on their own. There are half-page recording sheets you can reproduce for students to record their learning.

TASK SEVEN

Grab a yardstick and measure the length of the largest rug in your classroom.

TASK EIGHT

Grab a pencil and paper. Draw a rectangle that is 7c wide and 3cm tall. Now dra another rectangle that is lc longer on each side.

TASK TWELVE

What unit is the best to measure each object below?

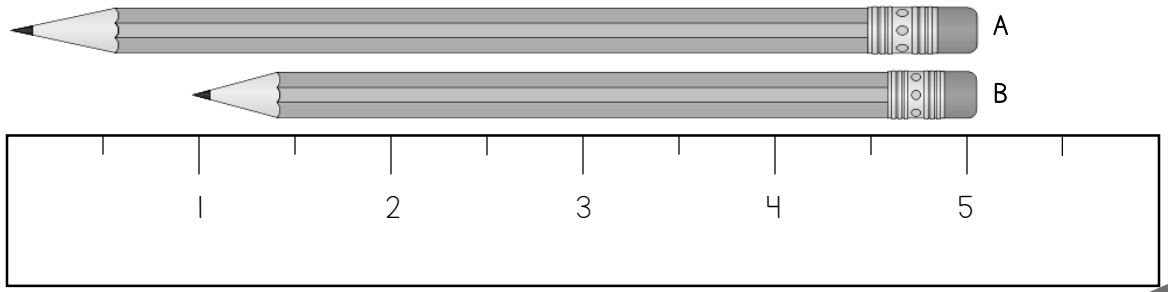
inches feet yards

1. HEIGHT OF A GIRAFFE
2. HEIGHT OF A MUG
3. HEIGHT OF A BUILDING

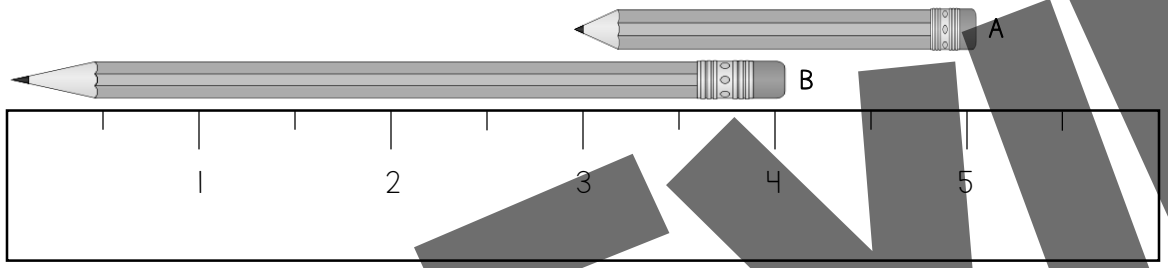
PENCIL WARS

NAME: _____

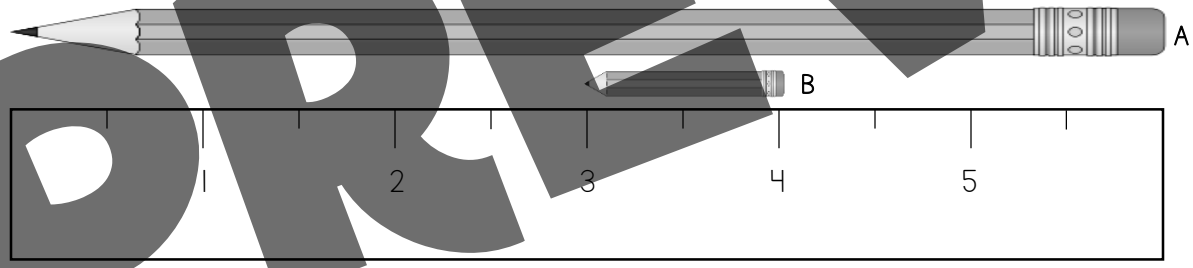
Take a close look at the length of both pencils and compare them (<,>,=) based on what you've measured.



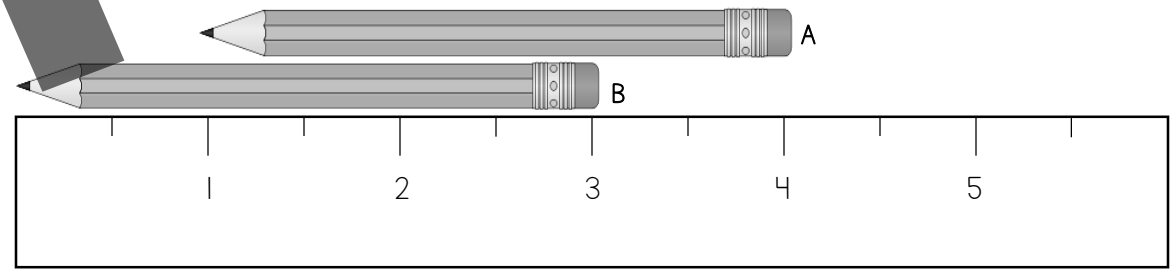
_____ ○ _____
A B



_____ ○ _____
A B



_____ ○ _____
A B



_____ ○ _____
A B

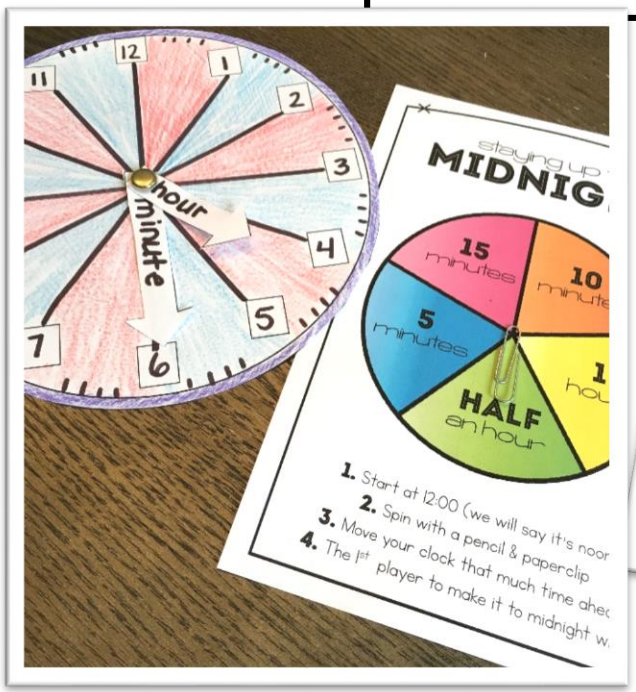
PREVIEW

TIME:

OBJECTIVES:

Students will be able to:

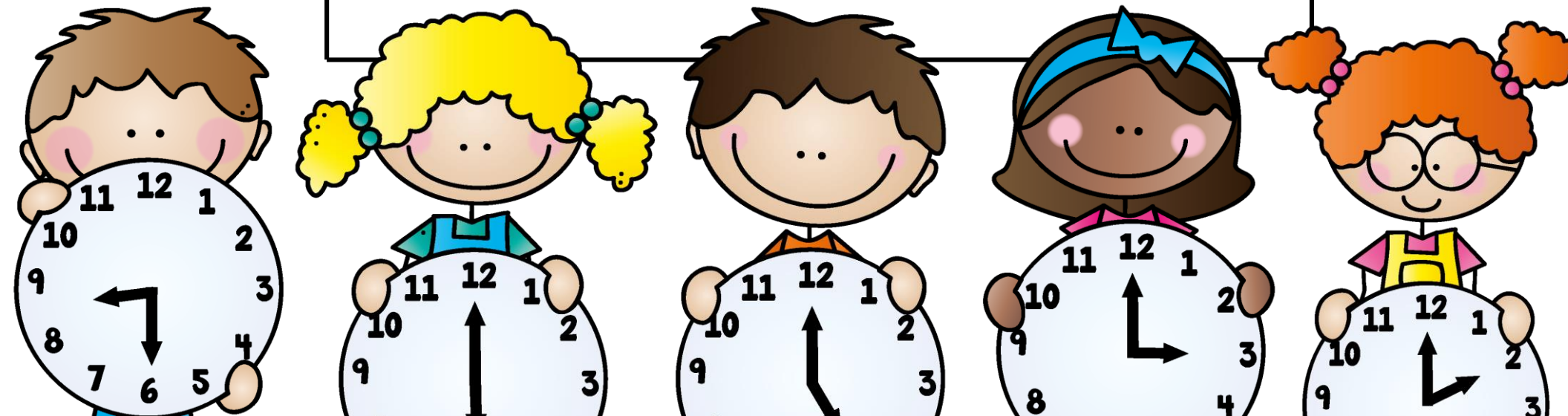
- Tell time on both analog and digital clocks.
- Tell time to the nearest fifteen minute intervals.
- Estimate the length of time of different activities.
- Answer word problems regarding the passing of time.



TIME:

LESSONS:

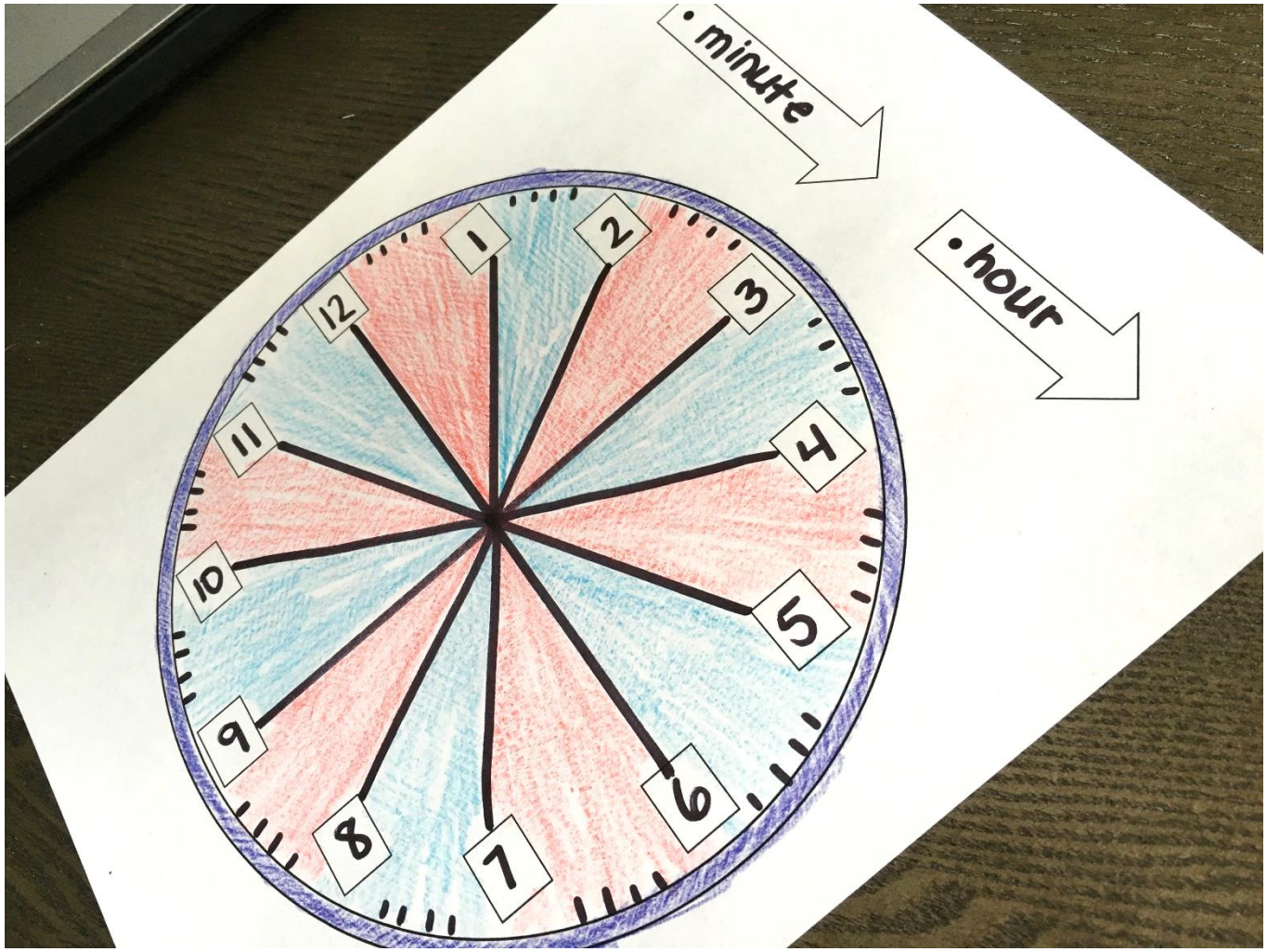
- Clockmakers
- Analog & Digital matchbook
- The Perfect Schedule
- Staying up til Midnight
- Time Sorts
- Time task cards
- Practice pages



LESSON I.

CLOCKMAKERS

When learning about time, it is important for my students to understanding the meaning of the numbers and marks on a clock. I also find that when my students start by creating their own clock, they better understand how to read a clock on their own.



TIPS :

- I have my big, yellow teacher clock out throughout this lesson and use it for example throughout the clock-making process.
- The following pages have the clock template as well as the questions I ask throughout the lesson.

LESSON 2.

ANALOG & DIGITAL MATCHBOOK

Once students learn how to read a clock, it is important that they practice, practice, practice! This is a simple matching book for students to practice reading both analog and digital clocks.

TIPS:

- Students will glue the top of the analog clocks first and fold up on the dotted lines.
- Then students will find the matching digital clocks and paste underneath.
- Once it's complete, we use our matchbooks to quiz classmates and have them check their answers by looking underneath.

LESSON 4.

STAYING UP TIL MIDNIGHT!

This is a fun partner race game where students try to be the first ones to make it until midnight. Students simply use their clocks and spinners (color option and B&W available) to add time to their clock until 12 hours pass. The directions on how to play are on the spinners themselves.

TIPS

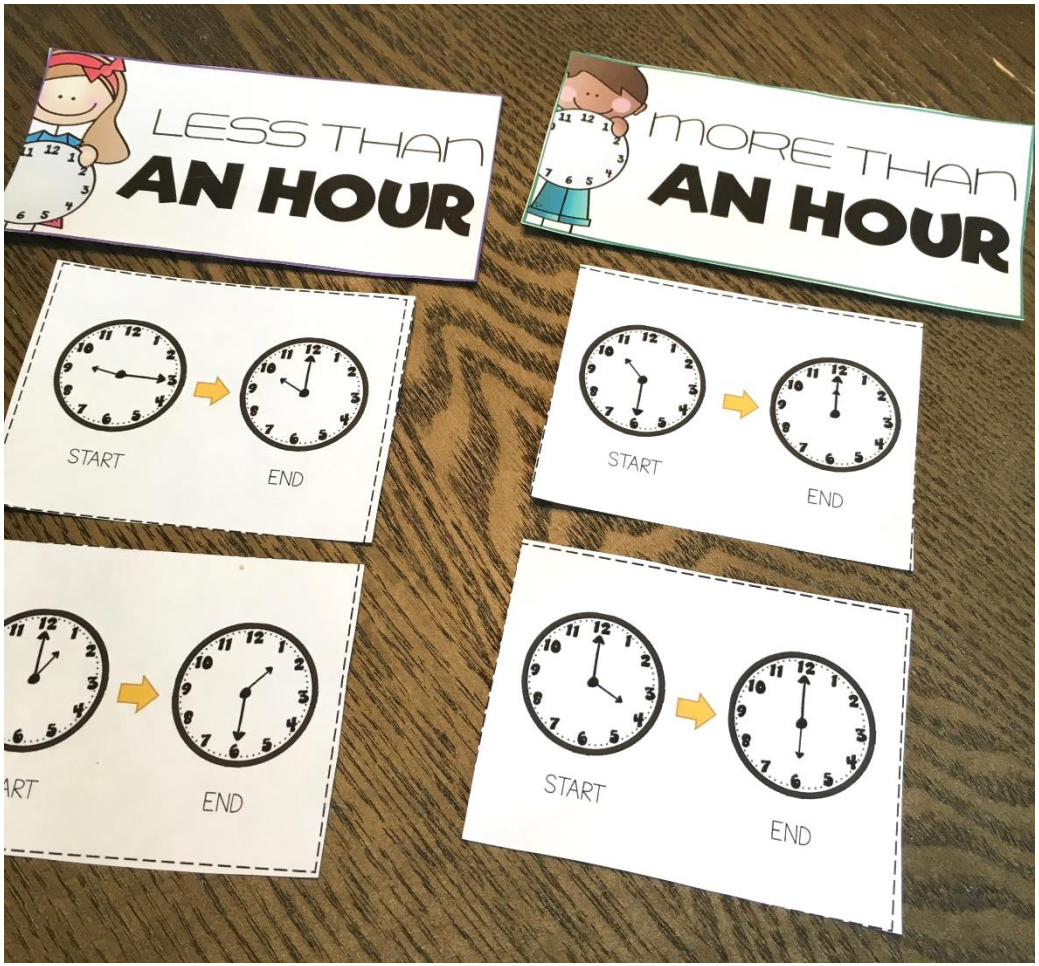
- During the modeled lesson, I make sure to show students that they need to move the minute hand AND the hour hand as they play.
- Students can use their clockmakers clock or any other student clock they have.
- As students are playing I make sure to check in to see if they can add the correct amount of time to their clock and to see if they are moving the hour hand as well.

LESSON 5.

TIME SORTS

Here are three different sorts that allow your students to practice:

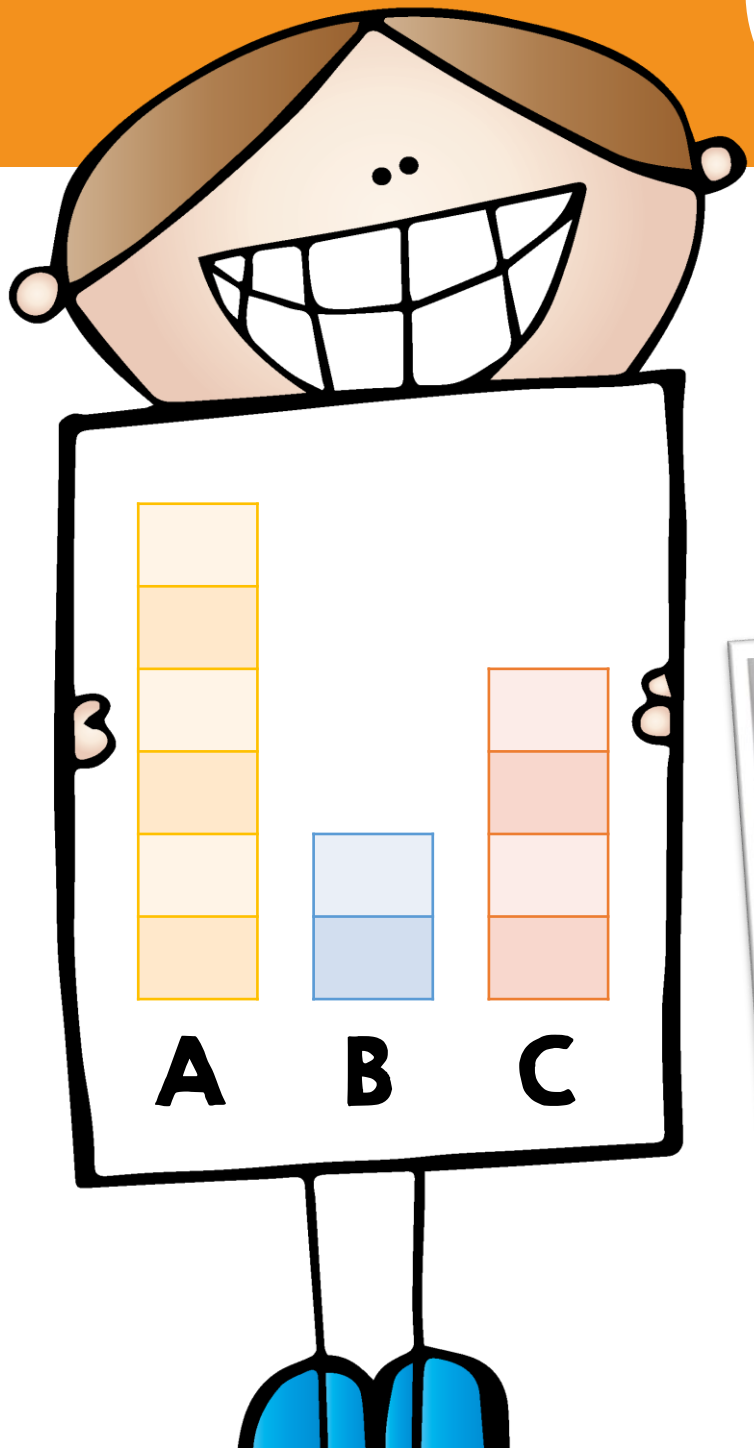
1. AM/PM
2. Elapsed Time
3. Concepts of time



TIPS:

- We always discuss these topics whole group first and practice a few of the sorts and our reasoning for choosing that category.
- When we discuss it whole group first it helps clear up some misconceptions from the class before they go off an complete them with a partner.

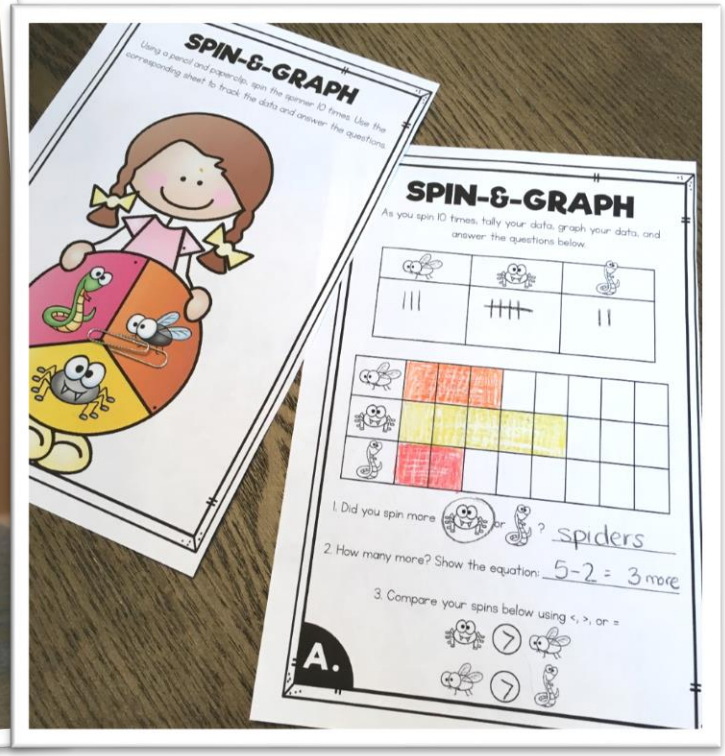
GRAPHING:



OBJECTIVES:

Students will be able to:

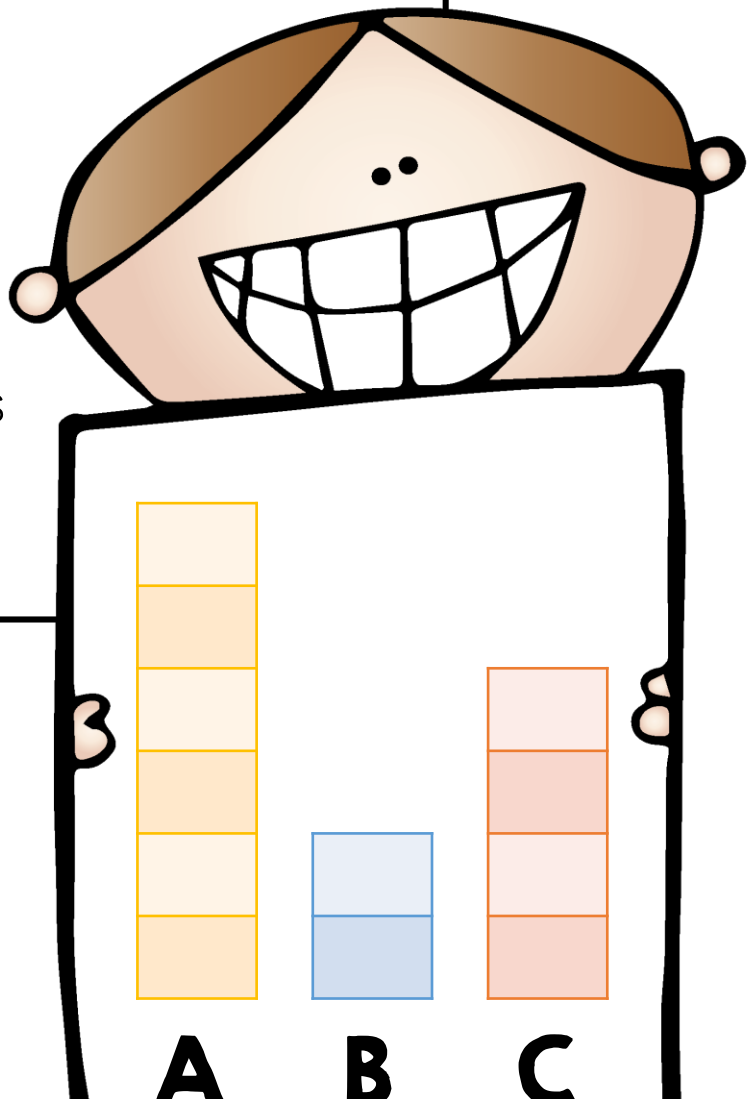
- Collect data accurately.
- Organize data using different types of graphs.
- Compare and analyze data shown on different graphs.



GRAPHING:

LESSONS:

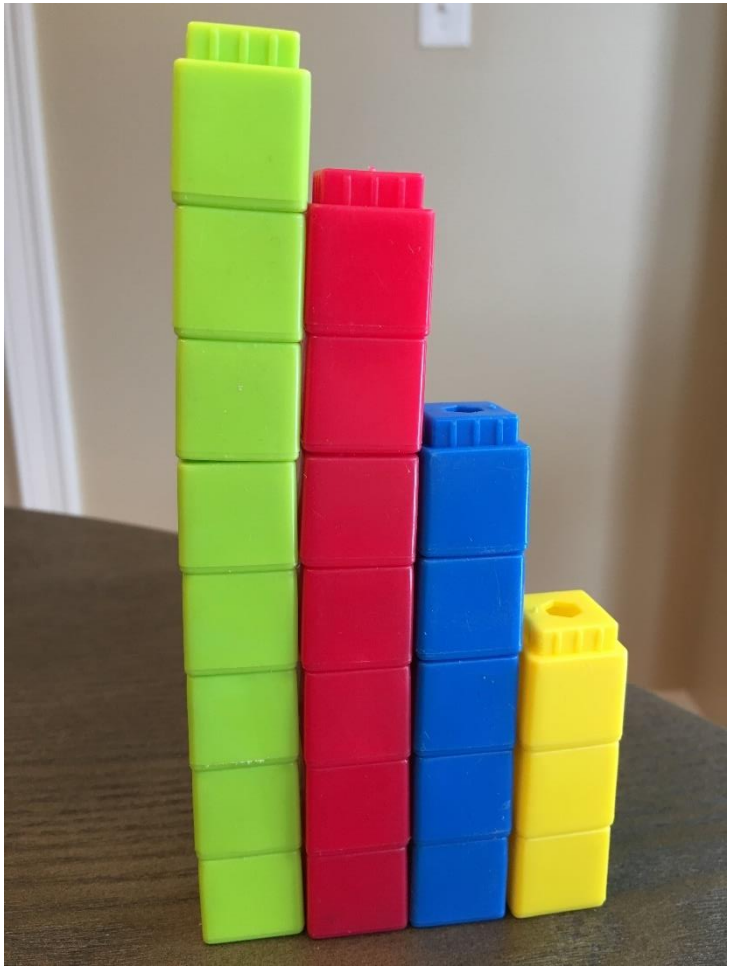
- Block graphs
- Data Collection
- Spin-&-Graph
- Cups of Counters
- Class Graphs
- Data/Graphing task cards
- Practice pages



LESSON I.

BLOCK GRAPHS

This is a fun, simple way for students to begin collecting data and showing their results by creating a bar graph. The hands-on activity is fun with partners, in a small group, or for students to complete by themselves! I make bags of connecting cubes and students sort and stack them by color to create a graph. Then, students can complete the paper graph and questions.



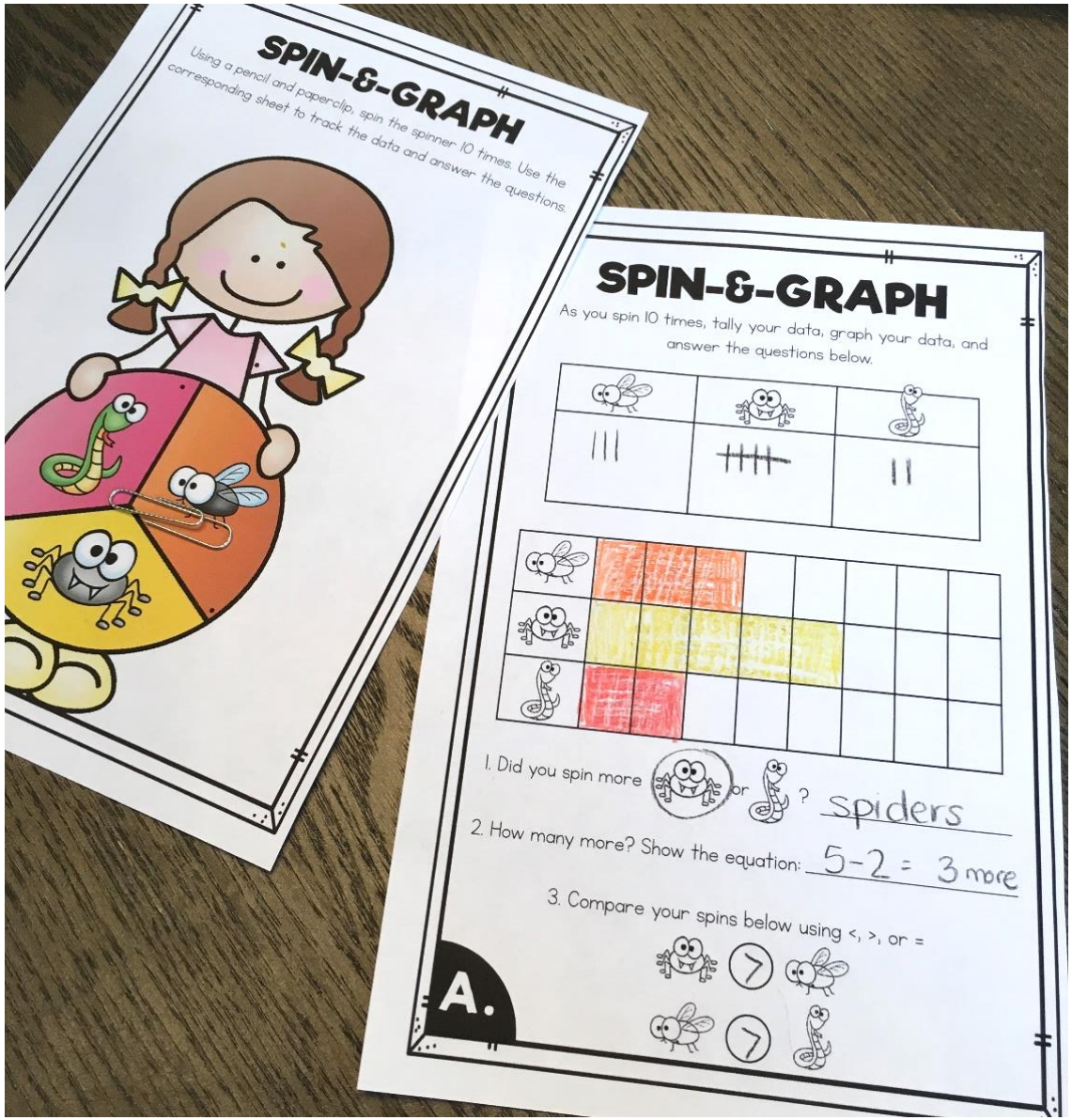
TIPS :

- This lesson can be completed many times with different bags of blocks - my students never seem to tire of this one!
- During my modeled lesson I am sure to show that the bottom blocks of each color need to start at the same place, just like on the paper graph.

LESSON 3.

SPIN-&-GRAPH

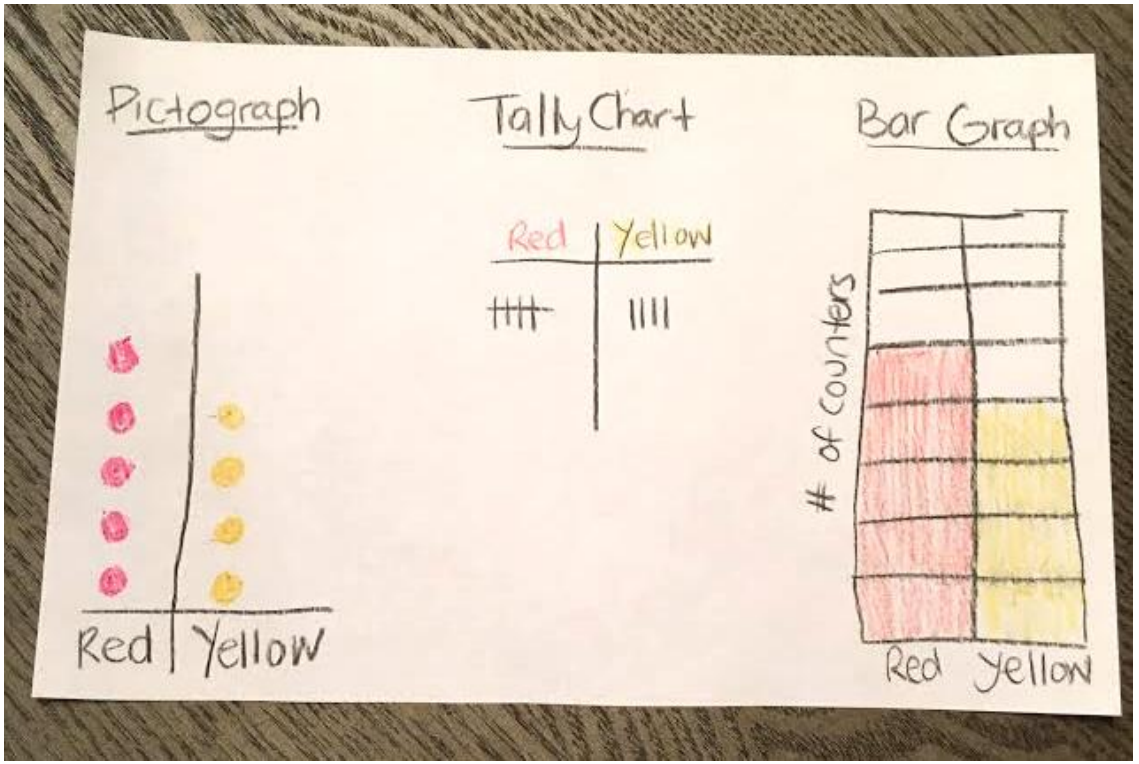
These are some simple spin and graph cards with recording sheets for students to practice collecting, graphing and interpreting data. Students follow the directions on the spin cards, create a tally chart, then graph the data and answer the questions.



LESSON 4.

CUPS OF COUNTERS

This activity lets students practice different ways to show data using simple yellow and red 2-sided counters. I put a bunch of counters in a cup and students shake the cup and dump the counters out. They can choose to show their data using a tally chart, a bar graph, or a pictograph. They will put their counters back in and repeat 2 more times until all they show data 3 different ways.

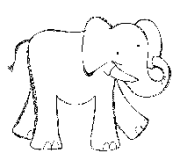
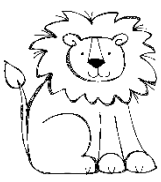


TIPS:

- During my modeled lesson, I review how to make all three graphs while teaching them how to play.
- I complete this lesson when my students already have been exposed to the graphs so at this stage I just put out half sheets of paper for students to create their own graphs from scratch (like above). The next page provides a bit more guidance if you choose to use that instead.

MY FAVORITE ANIMAL

BY: _____

1. How many students chose an alligator?

_____

2. How many students chose an elephant?

_____

3. What is the difference between your answers for 1 and 2?

☐ - ☐ = ☐

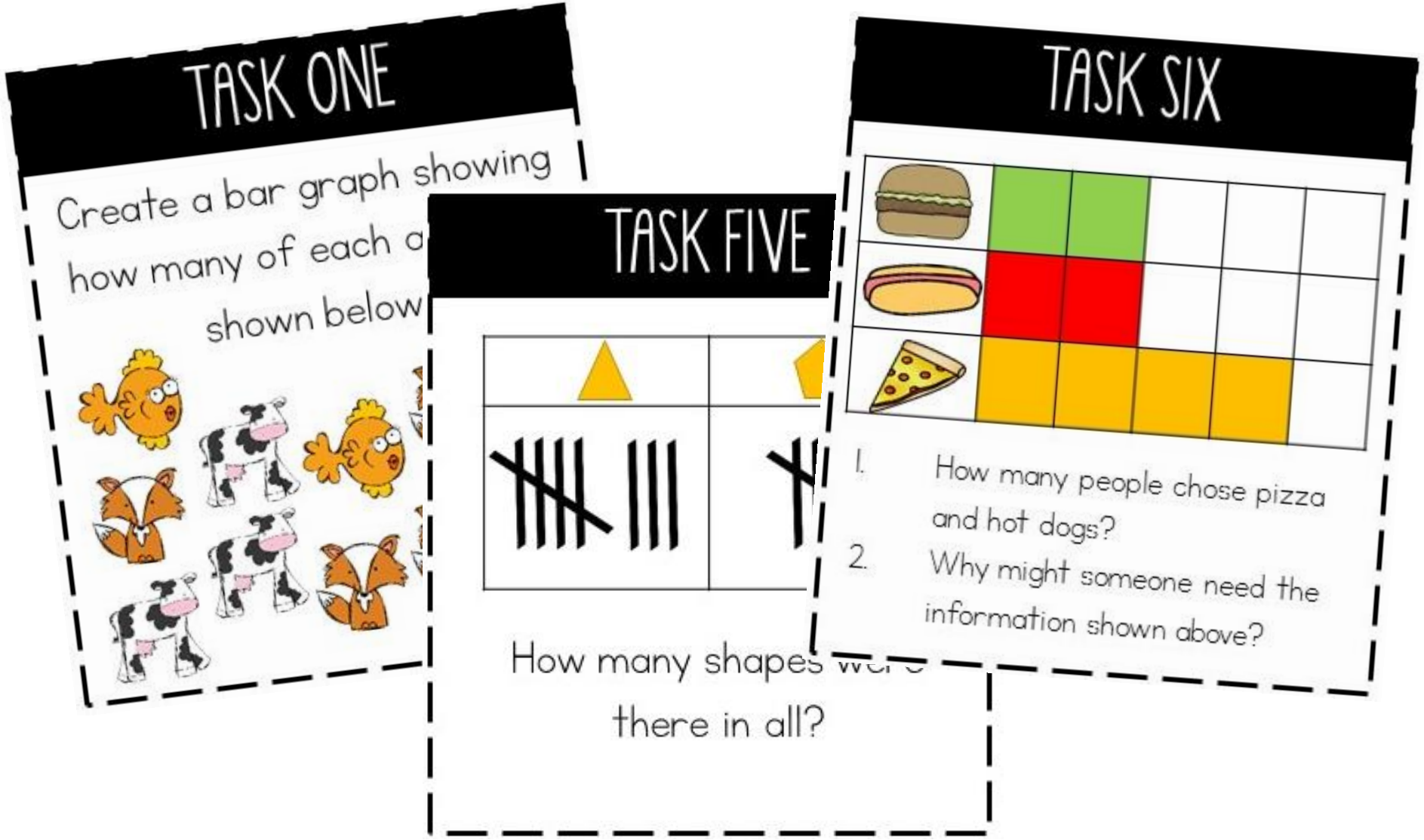
4. How many students voted for the lion, monkey, and elephant altogether? Show the equation below:

_____

PREVIEW

DATA & GRAPHING TASK CARDS

These task cards are simple ways to have students practice data collection and graphing. I generally have my students complete these tasks on a blank piece of paper or in their math journals as each task is different.



SHOW ME YOUR GRAPHS

NAME: _____

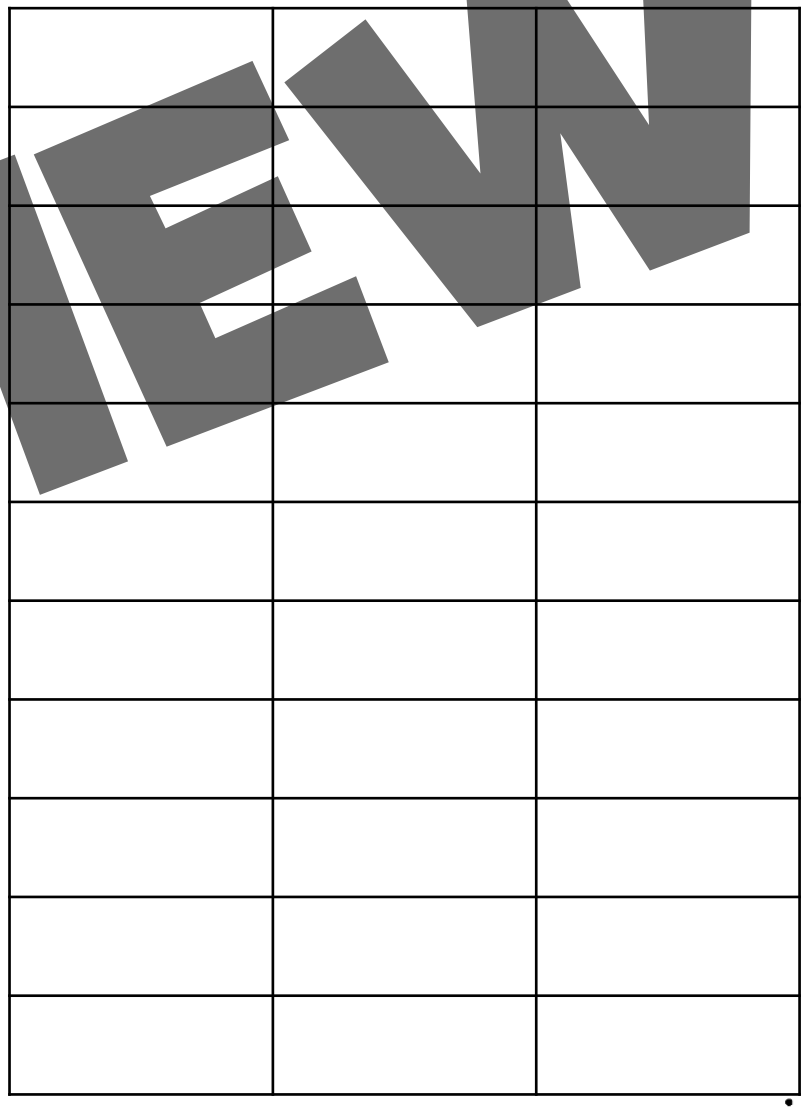
Use the information below to complete each graph.

Reading: 7 Math: 10 Writing: 5

TALLY CHART:

PICTOGRAPH:

BAR GRAPH:



PREVIEW

THANK YOU!

Thank you so much for downloading my Measurement, Time and Data math unit! I hope you and your students enjoyed the activities I have included. For more ideas and freebies, visit me at my blog:

http://thankgoditsfirstgrade.blogspot.com

❤ Susan

FONTS & GRAPHICS:

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