Everyday Math Warm-Up

Using Pictographs

A pictograph is a graph that uses pictures or symbols to show information. (You may have seen one on the front page of the newspaper *USA Today.*) The key tells you what each symbol or picture represents. The pictograph below shows how many kids chose puppies, kittens, or lizards as their favorite pets. Puppies were the favorite, with 3 X's. The key tells you that 1 X equals 2 votes. Since 3 X's equals 6 votes, puppies got 6 votes.

Kids' Favorite Pets	
Puppies	XXX
Kittens	XX
Lizards	X

Key: X equals 2 votes.

Using Bar Graphs

A bar graph helps you to compare different things. When you look at a bar graph, think of each bar as a ruler. That should make it easier to read.

Reading Line Graphs

Unlike bar graphs and pictographs, which just show amounts, line graphs show how things change over time. The points on a line graph are connected to make it easier to see how the data has changed. Try using a ruler -- or the straight edge of a notebook or a piece of paper -- to match the points on the graph to the numbers on the scale. This will make it easier to read the line graph.

Time to the Nearest Five Minutes

It's important to know that it takes 5 minutes for the minute hand to move from one number to the next on a clock, and that there are 60 minutes in an hour. You may get the 2 hands on a clock mixed up. Remember that the minute hand is always longer than the hour hand.

Exploring Time to the Nearest Minute
It takes 1 minute for the minute hand to move 1 mark on the clock. So, if it's 9:30, in 1 minute it will be 9:31. You can write this time in 3 different ways:

> 9:31
> nine thirty-one
> thirty-one minutes past nine

It takes about 1 minute to count to 60. So, it should take you about 15 seconds to count to 15.

Time to the Half Hour and Quarter Hour
When you're telling time, try dividing the clock into quarters and halves. A "quarter" is 15 minutes, and a "half" is 30. "Quarter to" is the same thing as 15 minutes before, and "quarter past" means 15 minutes after the hour. "Half-past" is 30 minutes after the hour.

Each time occurs twice in 24 hours (1 day). A.M. tells us this time is between midnight and noon, and P.M. tells us it is between noon and midnight. Each hour mark on the clock (1, 2, 3) is 5 minutes apart. If you start at the 12, you can skip count by 5's 3 times to reach the 3, which would mean that it's 15 minutes after the hour.

Elapsed Time
Elapsed time is how many hours or minutes it takes for something to happen. Find a clock that you can look at. Let's say recess starts at 12:30 and lasts for 30 minutes. It's over at 1:00. If you begin at the 6 (30 minutes past), and skip count by 5s until you reach 30, you'll end up at the 12 (1:00).

You can also organize information about time in a table. The table shows the hours and minutes separately, so that you can deal with them one at a time.

Start Time	+ Hours	New Time = Hours	+ Minutes	End Time
12:30 pm	3	3:00	30	3:30

Ordinal Numbers and the Calendar
You know what ordinal numbers are, even if you don't recognize the word "ordinal." Here are some examples of ordinal numbers: 1st, 2nd, 3rd, 15th, 26th. You use these numbers for ordering. Take a look at a calendar. There are 12 months in a year, and each month has about 30 days in it. When you talk about the days on a calendar, you use ordinal numbers, like January 1st or March 17th.

Counting Coins

You might find it easier to add up coins by "counting on." To add 2 nickels to a quarter, you count on from the quarter, and say: 25, 30, 35. Practice with 1 dollar bill, 1 quarter, 1 dime, 1 nickel, and 2 pennies. Start with the dollar bill. You would say as you add them up: "One dollar and twenty-five, thirty-five, forty, and one, two cents.") To keep track of your sum, you can write the value of each coin underneath it as you add.

Counting Coins and Bills

Line up a dollar bill, a quarter, and a dime. Start with the dollar bill, then count on to add the coins. (See "Counting Coins" for help with counting on.) You'll say: "One dollar, twenty-five, thirty-five." Remember that one dollar and thirty-five cents is written like this: $1.35, with the decimal mark separating the dollar from the cents.

Even if an amount of money is less than a dollar, you can still write it in dollars and cents: 35 cents is also written as $.35. Keep a written example of a dollar/cents sum handy when you're doing the practice sheets. You can look back at it if you get confused or forget the order of the dollars, cents, and the decimal point.

dollars → $3.75   ← cents

Using Money: Making Change

Since there are lots of different ways to make change, try to find the simplest way, using the fewest number of coins or bills. If you lose track while you're counting on, you can always write down the value of the coin that you're counting on.

It's much easier to learn if you can practice with real money. Get a few quarters, dimes, and nickels together. Let's say you've got a dollar bill to buy a candy bar. The candy bar costs 55¢. How much change will you get back? Try lining the coins up as you count on from the price of the candy bar until you reach 1 dollar. (Hint: add 2 dimes and 1 quarter to get to 1 dollar.)

	Dime	Dime	Quarter
55¢	65¢	75¢	$1.00

Adding Money
Adding money is just like adding whole numbers, but with a couple extra things to remember: the dollar sign and the decimal. Look at the example below. You'll see that you can add 2 numbers in 3 steps.

Step #1: Line up the decimal points:

6.50
+3.25

Step #2: Add the numbers together:

6.50
+3.25
9 75

Step #3: Add the dollar sign and the decimal:

6.50
+3.25
$9.75

Subtracting Money
Subtracting money is just like subtracting whole numbers. There are just a couple of extra things to remember: the dollar sign and the decimal. You can subtract money in 3 steps:

Step #1: Line up the decimal points:

5.25
- 3.15

Step #2: Subtract:

5.25
- 3.15
2 10

Step #3: Write the dollar sign and the decimal:

5.25
- 3.15
$2.10

To keep the decimal points in place, try doing a problem on lined paper that's turned sideways. You can line up the decimal points along the vertical line of the paper.

Using Money: Connecting Decimals and Money
Money amounts are written as decimals. You might be talking about one dollar fifty, but that's still written $1.50. Remember that there are always two places after the decimal point in money amounts. These numbers are the cents.

There are 100 pennies in 1 dollar, so 100 pennies = $1.00
And since 1¢ equals 1/100 of $1.00, 1¢ = $.01

There are 10 dimes in 1 dollar, so 10 dimes = $1.00
And since 10¢ equals 10/100 of $1.00, 10¢ = $0.10

This table shows the relationship between decimals and money amounts. If you've got one dollar and fifty-five cents, you can think of the fifty-five cents as 55 hundredths of a dollar, or $0.55.

ones	tenths	hundredths
dollars	dimes	pennies
1 .	5	5

In the table, one dollar and fifty-five cents shows as 1 dollar, 5 dimes, and 5 pennies. Or, 1 one, 5 tenths, and 5 hundredths.

Exploring Likely and Unlikely
These definitions will help you get through likely and unlikely worksheets:

Likely: If there's a good chance that something will happen, it's "likely" to happen. For example, if there are dark clouds in the sky, then rain is *likely*.

Unlikely: If there isn't a good chance that it will happen, it's "unlikely." So if it's sunny out, then rain is *unlikely*.

Impossible: If an event cannot happen… ever… then it's "impossible." For example, it's *impossible* for a goldfish to fly.

Possible: If something is able to happen, then it is "possible." It's *possible* that your goldfish eats fish food.

Certain: If something is definitely going to happen, then it's "certain." For example, it's certain that somewhere in the world, there are fish swimming in an ocean.

Exploring Predictions
When you make a **prediction** about something, you're basically guessing how likely or unlikely something is. For example, a weatherman/woman studies weather information, then makes a prediction about whether rain, snow, or sunshine is likely. Even if you're not in the weather biz, you can still use what you know to make a good guess, then test your prediction with an experiment. Put 10 pennies and 2 nickels into a paper bag or a shoebox. Make a prediction about which coin you'll pull out of the bag or box. Then grab one! Since there are more pennies in the bag or box than nickels, it's more likely that you'll get a penny.

Understanding Probability
Fractions come in handy when it's time to make a prediction based on probability. Let's say you've got 5 balls: 3 are red, 1 is blue, and 1 is yellow. If you close your eyes and pick one of the balls, you have a better chance of getting a red ball than any other color. In fact, there's a 3 out of 5 chance that you'll choose a red one.

- 3 out of 5 balls are red. The probability of grabbing a red ball is 3/5.
- 1 out of 5 balls is blue. The probability of grabbing a blue ball is 1/5.
- 1 out of 5 balls is yellow. The probability of grabbing a yellow ball is 1/5.

Remember that not all probabilities are high. There are low probabilities, too! A low probability is when something is not likely to happen.

Exploring Fair and Unfair
A spinner is a good way to demonstrate probability. Let's say you've got a spinner with equal sections: one striped, one dotted, and one blank. This is a fair spinner, because each outcome is equally likely. When you spin the needle, you have an equal chance of landing on the striped section, the dotted section, or the blank section.

1 out of 3 equal sections is striped. The probability of spinning striped is 1/3.
1 out of 3 equal sections is dotted. The probability of spinning dotted is 1/3.
1 out of 3 equal sections is blank. The probability of spinning blank is 1/3.

If a different spinner has 3 sections of unequal size, it's an unfair spinner. There are still 3 possible outcomes, but they are not equally likely.

Remember that you can tell if a spinner is fair by measuring the sections. The sections on a fair spinner are equal. The sections on an unfair spinner aren't equal. If the sections are colored in, it's easy to tell just by looking at the spinner whether it's fair.