

TORO'S MATH DRILLS

ConocoPhillips

INSTANT REPLAY

ACTIVITY WORKSHEETS

TORO's Math Drills presented by ConocoPhillips was developed in collaboration with our education partner, United Way of Greater Houston.



TORO'S MATH DRILLS

ConocoPhillips

TORO's Math Drills is an educational video series designed to challenge 3rd and 4th grade students. Covering subjects like fractions, multiplication, division, place value and money, TORO's Math Drills will help your students tackle math through fun and exciting football examples.

OUTLINE

VOCABULARY/CONCEPT RECAP

TEXANS/FOOTBALL EXAMPLE

OTHER/CLASSROOM EXAMPLE

Questions? Please email TOROsMathDrills@HoustonTexans.com

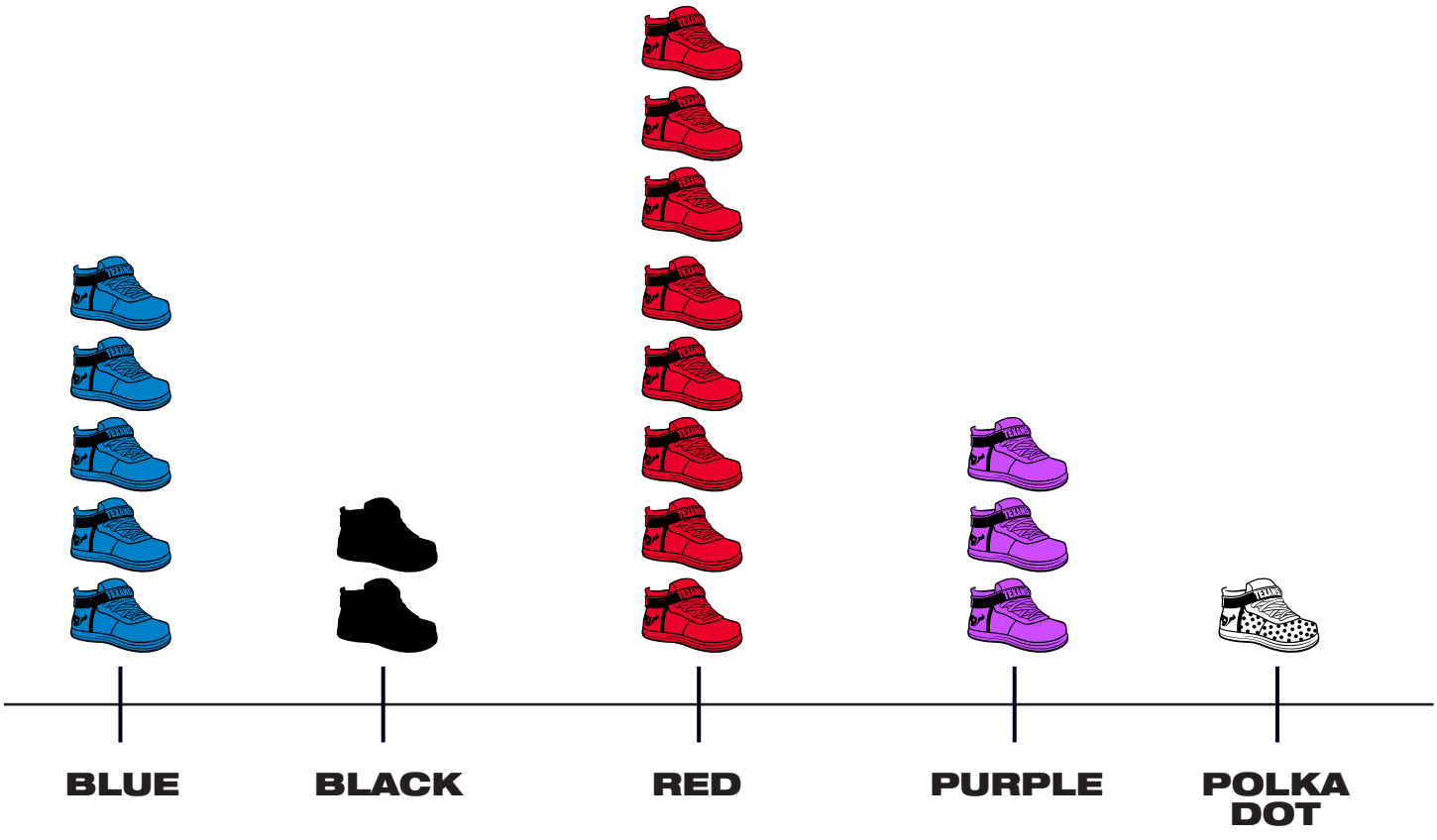
DATA ANALYSIS

Help TORO match each word with the correct definition! Draw a line from the vocabulary word to the correct definition.

Data	Making sense of information
Dot Plot	Information such as how many pairs of sneakers
Data Analysis	Graphical display of data using dots

Use the Dot Plot that shows TORO's different types of sneakers to answer the questions below.

TORO'S SNEAKERS



How many total sneakers does TORO have? 19 total sneakers

How many more red sneakers does TORO have than purple? 5 more red

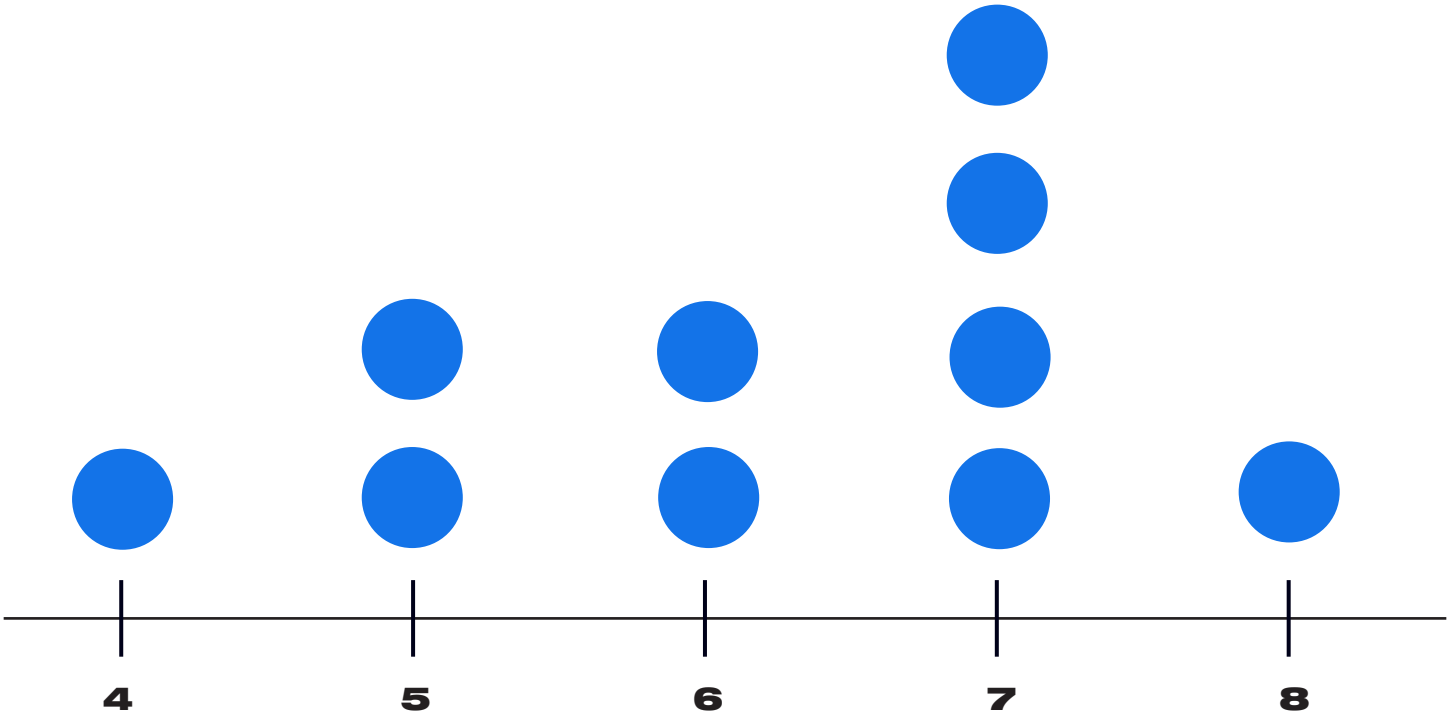
DATA ANALYSIS

Nice! TORO needs another favor. He asked ten fans to participate in the TORO Passing Challenge. He passed the football to each fan and recorded the number of times they caught the ball. Below are the results.

Fan 1	Fan 2	Fan 3	Fan 4	Fan 5	Fan 6	Fan 7	Fan 8	Fan 9	Fan 10
4	7	6	5	7	8	5	7	6	7

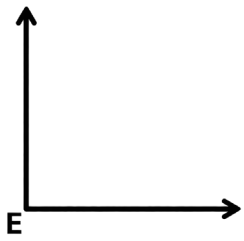
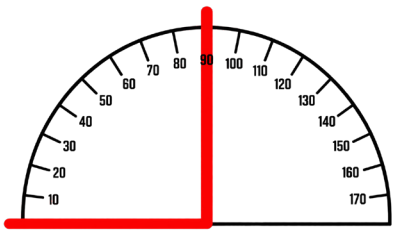
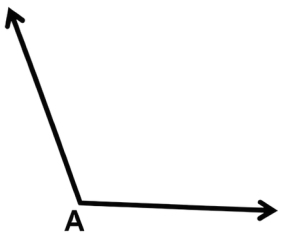
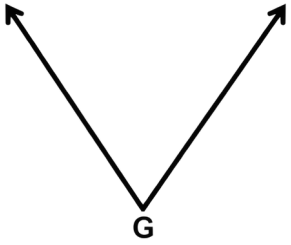
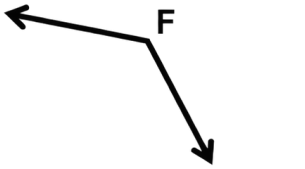
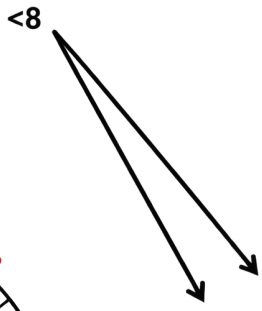
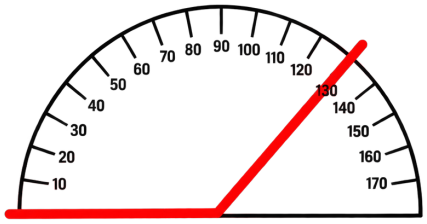
Help him by using the data he collected to complete the Dot Plot below.

TORO'S PASSING CHALLENGE

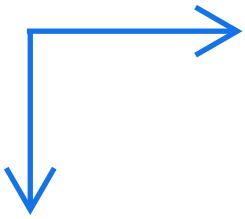


ANGLES

Directions: Help TORO better understand the different angles! Study the examples and nonexamples to determine what makes each type of angle unique. Then draw your own example and explain why it belongs in that category.

Examples of Right Angles	Non-Examples of Right Angles
  	    

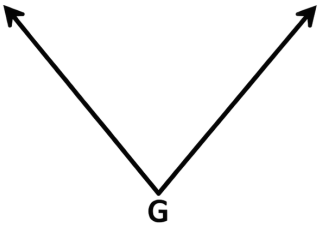
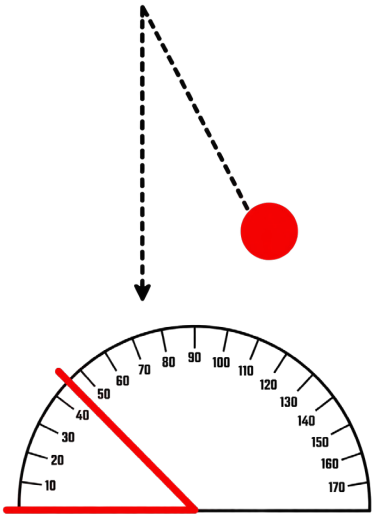
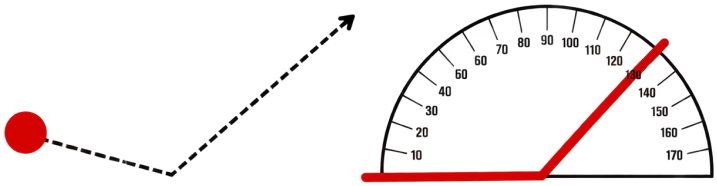
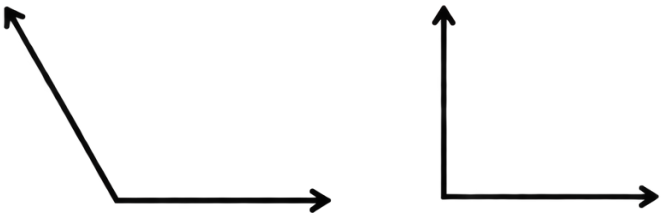
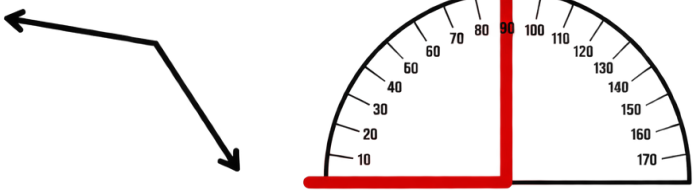
Draw a right angle.



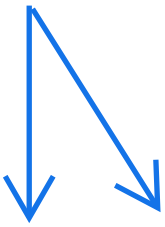
Answers will vary.

Right angles measure 90 ·

ANGLES

Examples of Acute Angles	Non-Examples of Acute Angles
 	  

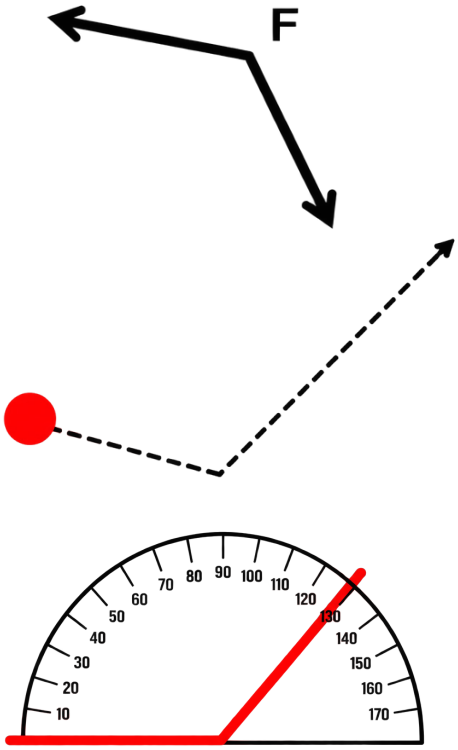
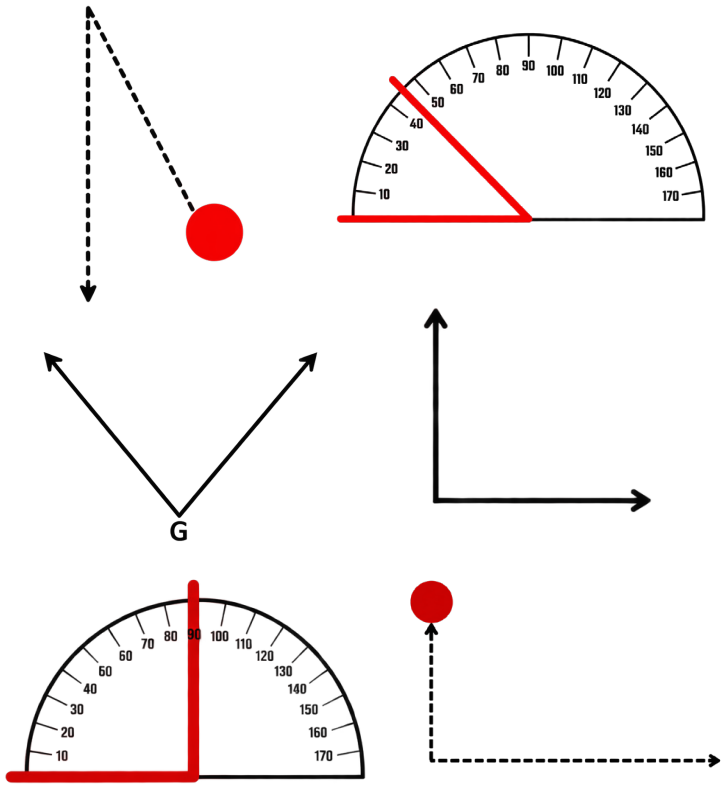
Draw an acute angle.



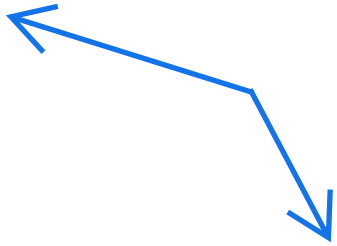
Answers will vary.

Acute angles measure Less than 90°

ANGLES

Examples of Obtuse Angles	Non-Examples of Obtuse Angles
	

Draw an obtuse angle.



Answers will vary.

Obtuse angles measure more than 90° **and** less than 180°

ALGEBRAIC REASONING

Algebraic Reasoning can help me... (check all that apply)

- [x] Find a missing value
- [x] Recognize a pattern
- [x] Determine how quantities are related
- [x] Use a rule to find an output
- [ ] Measure the length of an object

Which of these did you see in the video?

Use your Algebraic Reasoning skills to help TORO with the following!

TORO tosses 15 t-shirts during each break of the Texans game. Analyze the table and determine which rule describes the relationship between the number of breaks and the number of t-shirts tossed.

TORO'S T-SHIRT TOSS

NUMBER OF BREAKS	T-SHIRTS TOSSED
1	15
2	30
3	45
4	60



A. + 14
B. + 15
C. × 15
D. × 14

The input in TORO's T-Shirt Toss is the number of breaks

The output in TORO's T-Shirt Toss is the t-shirts tossed

ALGEBRAIC REASONING

If the Texans start each play on the 20-yard line, what would be the ball's position after gaining each number of yards? Complete the table to show the ball's new position on the field after gaining each number of yards.

TORO MOVING DOWN THE FIELD: TEXANS BALL POSITION'S T-SHIRT TOSS

YARDS GAINED	FOOTBALL POSITION
1	21
2	22
3	23
4	24
5	25
6	26
7	27
8	28
9	29
10	30

Good job completing the table! Now, complete the sentence to describe the relationship between the yards gained and the football position.

The football's position equals the number of yards gained plus **20 yards.**

Review how Algebraic Reasoning can help you from the top of this worksheet. What are two ways you used Algebraic Reasoning to solve problems today?

Answers will vary. An example is given below.
I used Algebraic Reasoning to recognize patterns and determine how the numbers were related when analyzing the number of t-shirts tossed and the football position.

LIQUID VOLUME

Circle the measurements that may be used to measure liquid volume.

INCHES 

GALLONS 

FEET 

POUNDS 

PINTS 

LIQUID OUNCES 

QUARTS 

CUPS 

Determine which measurement would be best for measuring each item below.

Water in a player's bottle.	Fluid ounces	Gallons
Water in a sideline cooler.	Fluid ounces	Gallons
Soda in a concession stand drink.	Fluid ounces	Gallons
Sports drink prepared for the entire team.	Fluid ounces	Gallons

Great job! Now, see if you can answer this challenge problem!

The equipment staff is making sports drinks for the players. They need 2 gallons of sports drink. They have containers that hold 4 cups each. How many containers are needed if there are 16 cups in a gallon?

The equipment staff will need 8 containers.

MULTI-STEP OPERATIONS

In the video, you helped TORO and the equipment manager solve the following problem:

During Training Camp, at the beginning of the season there are 90 players on the Texans roster. By the time the regular season starts they have 37 fewer players on the team. Each of the remaining players gets 2 helmets plus 4 jerseys and 3 pairs of cleats. On gameday, how many of these items are in the locker room waiting for them? Show your thinking!

a. 155 helmets, 47 jerseys and 200 pairs of cleats

b. 106 helmets, 196 jerseys and 142 pairs of cleats

c. 98 helmets, 212 jerseys and 159 pairs of cleats

d. 106 helmets, 212 jerseys and 159 pairs of cleats



There are 477 total items in the locker room on game day.
9 players - 37 players= 53 players
2 helmets x 53= 106 helmets
4 jerseys x 53= 212 jerseys
3 pairs of cleats x 53= 159 pairs of cleats
106 helmets + 212 jerseys + 159 pairs of cleats = 477 total items

Great job! Because multistep problems require more than one step to solve, it can help to think about what you need to find first before you begin solving the problem.

MULTI-STEP OPERATIONS

The equipment manager has 60 footballs. He puts 8 footballs in each of 5 equipment bags. He leaves the rest of the footballs in the equipment room. How many footballs remain in the equipment room?



What should you find first? Explain why below.

- [x] **How many footballs are placed in the equipment bags**
- [ ] **How many footballs remain in the equipment room**



Answers may vary. Here is an example: I need to know how many footballs were put in the bags before I can find how many remain in the room.

Great! Now, solve the problem! How many footballs remain in the equipment room?

There are 20 footballs remaining in the equipment room.

Awesome job! Now, let's help TORO think about the following problem.

TORO has 150 Texans t-shirts to give away to fans. Before the game, he gives 35 t-shirts to fans outside the stadium. During the game, he gives away 8 t-shirts during each of 6 breaks. How many t-shirts does TORO have left?



TORO used the following steps to solve the problem.

8 × 6 = 48

150 – 35 = 115

115 + 48 = 163

TORO says he has 163 t-shirts left. Is TORO correct? Explain why or why not.

TORO is NOT correct because he added the 48 t-shirts he gave away during the game instead of subtracting them. After giving away 35 t-shirts, he had 115 left. He should subtract 48 from 115, so he has 67 t-shirts left.

FINANCIAL LITERACY

Help TORO match each word with the correct definition! Draw a line from the vocabulary word to the correct definition.

Income	**Money you spend**
Expenses	**Money you set aside for later**
Savings	**Money coming in or money you earn**

TORO uses his income to pay expenses, save for the future, and give to others. What do you think a budget helps TORO do?

A budget helps you Plan how to spend and save his money so he has enough for the things he needs and wants.

TORO earns $1,000 each month. He needs to decide how to use his money or complete his budget. Below are some of TORO's expenses.



EXPENSES	AMOUNT
Truck payment for TORO's Ford F-150	$350
Phone	$130
Electricity	$230
Props	$30
Sneakers	$70

How much will TORO spend on his expenses? $810

How much money will TORO have remaining after paying his expenses?

$190

FINANCIAL LITERACY

TORO needs help deciding what to do with his remaining money! He wants to save some and give some to charity. He also wants some money left to spend on fun. Help TORO make a plan.

TORO'S PLAN	AMOUNT OF MONEY
Savings	$ 90
Charity	$ 40
Fun	$ 60

Answers will vary. An example is given above.



Explain why you chose to use TORO's remaining money this way.

Answers will vary. Example:

I had TORO save the most money so he would have money for the future. I also gave some to charity to help others and left some for fun.

PLACE VALUE

What is Place Value?

What a digit is worth, based on its position in a number.

If the Houston Texans quarterback throws the football for 4,823 passing yards during the football season, what is the place value of each digit?

4 Thousands

8: Hundreds

2: Tens

3: Ones

Now let's break it down 4,823 in expanded notation.

4,000 = 4 x 1,000 = 4 Thousands
800 = 8 x 100 = 8 Hundreds
20 = 2 x 10= 2 Tens
3 = 3x 1 = 3 Ones

Great job! Can you think of another number and determine the place value of each digit?

☐ _____ ☐ _____

☐ _____ ☐ _____

FRACTIONS

What is a Fraction?

A part of a whole.

The top number of a fraction that tells us how many parts of whole is called the Numerator **. The bottom number of a fraction that tells us how many items make up the whole is called the** Denominator **.**

It's gameday! The Houston Texans players are getting ready for the game. There's been a mix up! 2 players are wearing their Deep Steel Blue jerseys and 3 players are wearing their Battle Red jerseys. What is the fraction for the players wearing the Battle Red jersey?

$\frac{3}{5}$

Great job! Now look around your classroom and see what other items you can find that has many parts of a whole. What do you see?

MONEY

What is Money?

A piece of paper called a bill or a piece of flat round metal called a coin. We use it to buy things we need and want.

You're going to a Houston Texans game! You have $20.00. What can you buy from the concession stand?

CONCESSION STAND $$ CHART	
Soft Drink	$5.00
Bottled Water	$2.00
Popcorn	$5.25
Hot Dogs	$5.75

YOUR ORDER

Cost	Item
$_____	_____
$_____	_____
$_____	_____
$_____	_____

Total $_____

Did you get any change back? _____

If yes, how much? _____

Great job! Now think about what other items you could buy with $20.00. Write your wish list below.

3-DIGIT MULTIPLICATION AND DIVISION

What is multiplication? Repeated addition.

What sign do you use for multiplication? x

What is division? Splitting something into equal parts or groups.

What sign do you use for division? ÷

The Houston Texans football game lasts for 4 quarters – 1st quarter, 2nd quarter, 3rd quarter and 4th quarter. The Houston Texans Cheerleaders did 3 cheers every quarter. How many cheers did the Houston Texans cheerleaders do for the whole game?

4 quarters **X** 3 cheers **=** 12 **cheers**

If during one game the cheerleaders did 16 cheers in total? How many cheers did they do each quarter?

16 cheers **÷** 4 quarters **=** 4 **cheers**

Great job! Now, think about how many minutes you spend watching TV or playing on your tablet every day? How many times does that make every week?

_____ **X** _____ **days =** _____

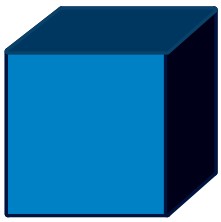
2D & 3D SHAPES

What does the D stand for in 2D and 3D? Dimensional

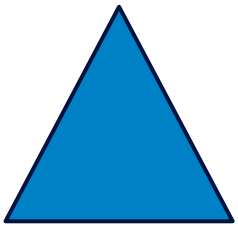
Things that are flat are 2 D

Things you see in real life are 3 D

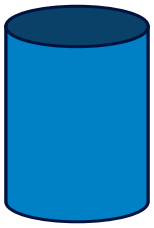
Name these 2D and 3D shapes?



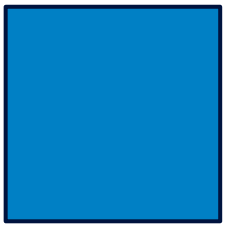
Cube



Triangle



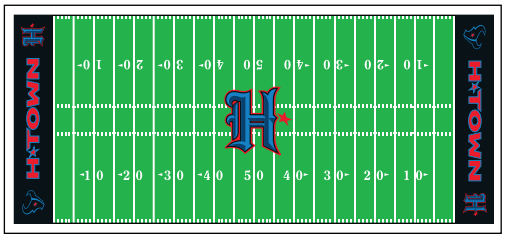
Cylinder



Square



Is a football a 2D or 3D shape? (circle one)



Is the Houston Texans field a 2D or 3D shape? (circle one)

Great job! Now, look around your classroom. What other 2D or 3D shapes do you see?

_____ **Is it 2D or 3D? (circle one)**

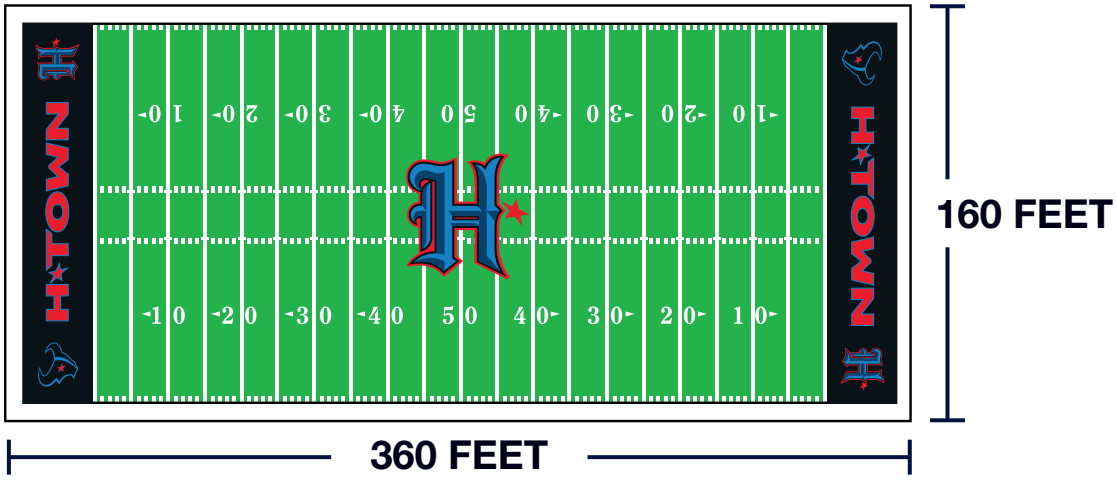
_____ **Is it 2D or 3D? (circle one)**

_____ **Is it 2D or 3D? (circle one)**

PERIMETER & AREA

The distance around a flat shape is? Perimeter

The size of the surface is? Area



The total size of the Houston Texans football field is 360 feet in length and 160 feet in width. How do you calculate the perimeter of the field?

360 + 360 + 160 + 160 = 1,040 **feet**

How do you calculate the area of the field?

360 x 160 = **57,600 square feet**

***Hint: The formula for area is length x width.**

Great job! Now can you calculate perimeter of your notebook, desk or table? I'm calculating the perimeter of my: _____

_____ + _____ + _____ + _____ = _____ **feet**