

# Welcome to the ST Math Activity Pages!

These activity pages are like a playground of your favorite ST Math games in book form.

Scan the QR codes to play the ST Math puzzles related to each page.



I like the challenging problems in this book because I like the feeling when I figure it out.

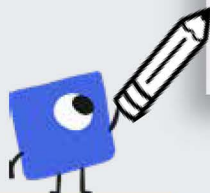
I like problems that are:

- |                                     |                                |
|-------------------------------------|--------------------------------|
| <input type="checkbox"/> tricky     | <input type="checkbox"/> easy  |
| <input type="checkbox"/> complex    | <input type="checkbox"/> short |
| <input type="checkbox"/> open-ended | <input type="checkbox"/>       |

because...

The problems remind me of the games in ST Math.

There are many ways to show your thinking.



## What's Inside?

**MATCH FRACTION**

Match & Make

$\frac{2}{5}$   $\frac{5}{8}$   $\frac{1}{2}$   $\frac{1}{4}$   $\frac{4}{6}$   $\frac{2}{3}$

That's just one whole.

I'm obsessed with  $\frac{3}{4}$  right now! I want to color in  $\frac{3}{4}$  everywhere!

Which two fractions are the same size?

If all of these models represent  $\frac{3}{4}$ , why are they so different from each other?

The tricky part of making fractions is:

**Match**

$\frac{2}{4}$

**Write**

$2 \times 3 = 6$

**Model**

2 groups

**Draw**

**Plot**

**Fill in**



This is **your** math journey, so make these pages **yours** - fill them with your ideas, make mistakes, and challenge yourself!

What if I don't know what to do?

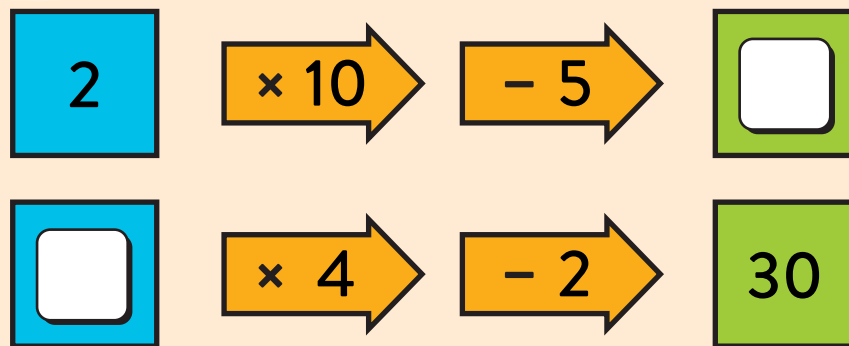
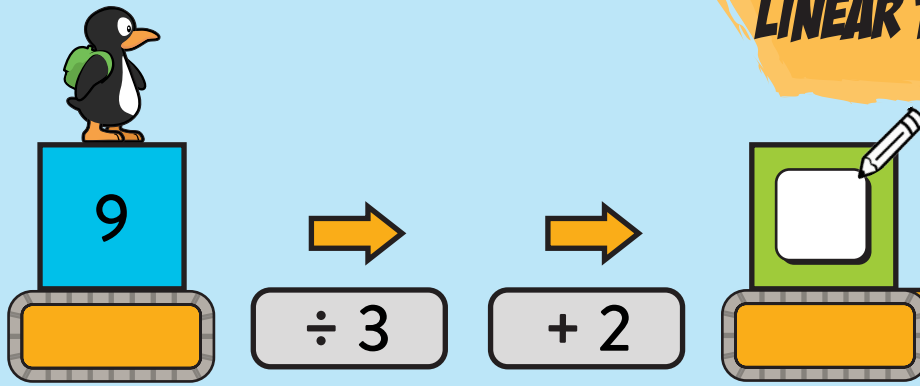
Try writing down what you think and then see how your ideas work out.

What if I don't get it correct right away?

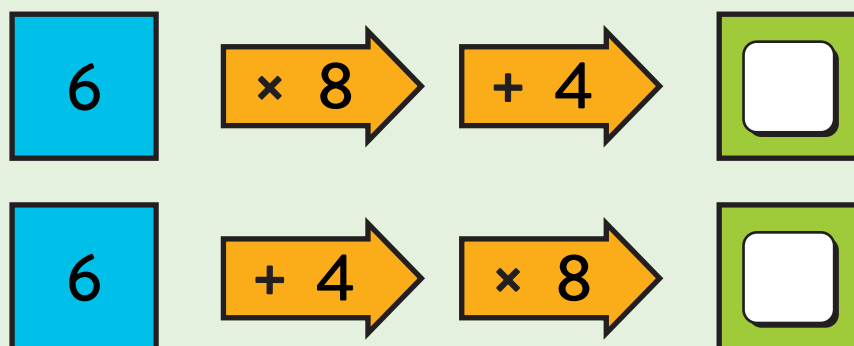
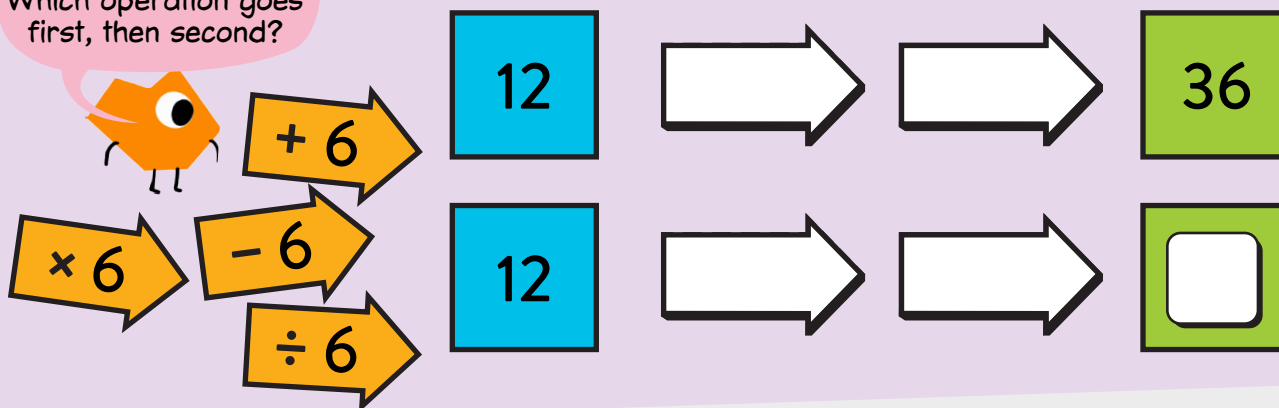
Mistakes are okay because you can always come back to it. And mistakes help us learn!



# LINEAR TRANSFORM



Help me put these machines together!  
Which operation goes first, then second?



What happens if I switch the order of the operations?



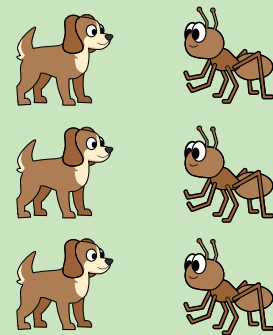
## LEG DRAPE BOOTS

$$2 \text{ ostriches} + 3 \text{ stars} = \boxed{\phantom{00}} \text{ shoe}$$

$$4 \text{ robots} + 2 \text{ dogs} = \boxed{\phantom{00}} \text{ shoe}$$

$$5 \text{ green bugs} - 2 \text{ stars} = \boxed{\phantom{00}} \text{ shoe}$$

$$5 \text{ octopuses} - 7 \text{ ostriches} = \boxed{\phantom{00}} \text{ shoe}$$



Altogether, we wear  shoes.

$$\boxed{\phantom{00}} \text{ ant} = \boxed{\phantom{00}} \times 6$$

$$6 \text{ robots} = \boxed{\phantom{00}} \times \boxed{\phantom{00}}$$

What about us?

$$5 \times \text{[octopus and robot]} = \boxed{\phantom{00}} \text{ shoe}$$

$$\boxed{\phantom{00}} \text{ shoe} = 1 \text{ octopus} + 2 \text{ dogs} + 8 \text{ green bugs}$$

$$\boxed{\phantom{00}} \text{ shoe} = 3 \text{ aliens} + 1 \text{ star} - 2 \text{ robots}$$

$$3 \text{ buses} + 4 \text{ ostriches} = \boxed{\phantom{00}} \text{ shoe}$$

$$\boxed{\phantom{00}} \times \boxed{\phantom{00}}$$

$$4 \times \boxed{\phantom{00}}$$

# & CREATURES

$$2 \text{ (green bug)} + 2 \text{ (robot)} + \boxed{\phantom{00}} \text{ (dog)} = 30 \text{ (shoe)}$$

$$\boxed{\phantom{00}} \text{ (green bug)} + \boxed{\phantom{00}} \text{ (ostrich)} + 2 \text{ (dog)} = 30 \text{ (shoe)}$$

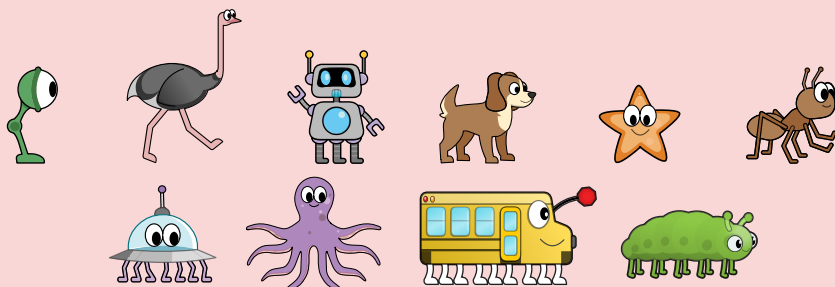
$$20 \text{ (shoe)} = \boxed{\phantom{00}} \text{ (star)}$$

$$20 \text{ (shoe)} = \boxed{\phantom{00}} \text{ (star)} + \boxed{\phantom{00}} \text{ (ostrich)}$$

$$20 \text{ (shoe)} = \boxed{\phantom{00}} \text{ (star)} + \boxed{\phantom{00}} \text{ (pea plant)}$$

$$20 \text{ (shoe)} = \boxed{\phantom{00}} \text{ (star)} + \boxed{\phantom{00}} \text{ (ostrich)} + \boxed{\phantom{00}} \text{ (robot)}$$

Who can I not wear 20 shoes with?  
How do you know?



The shoe store started with an inventory of 50 shoes. At the end of the day, there were 21 shoes left. What creatures might have bought shoes that day?

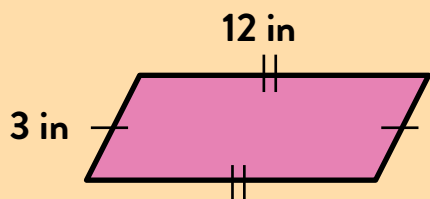


## PERIMETER SELECT

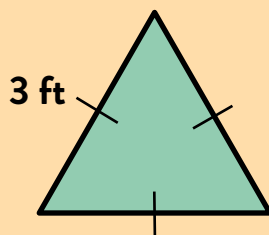


How much of me does it take to wrap around the outside of each of these shapes?

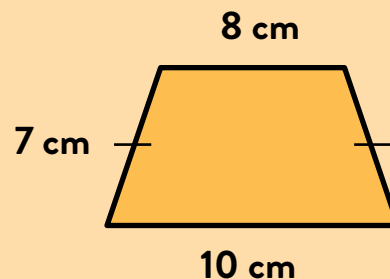
Perimeter =

 in


Perimeter =

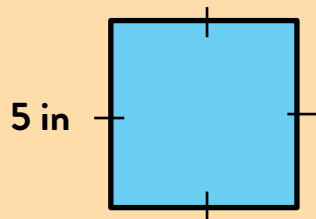
 ft


Perimeter =

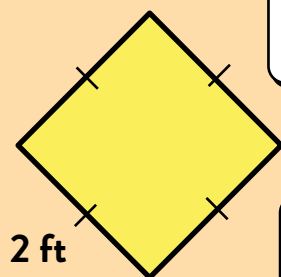
 cm


## AREA SELECT

Perimeter =

 in


Area =

 sq. in


Perimeter =

 ft

Area =

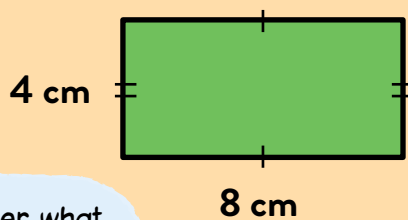
 sq. ft

Careful!

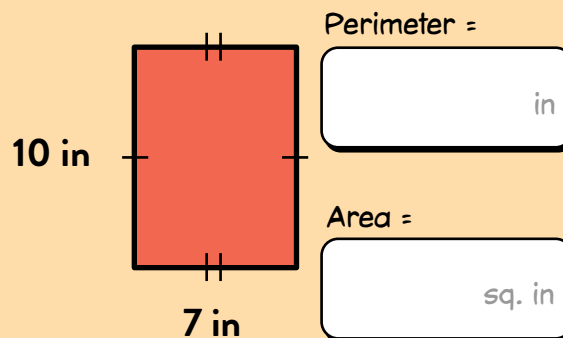
The shape with the longest perimeter on the page is



Perimeter =

 cm


Area =

 sq. cm


Perimeter =

 in

Area =

 sq. in

I wonder what each of these tick marks are for?



How many tiles does it take to fill the inside of each of these shapes?







# Jiji Cycle

Jiji will land on the

balloons.

How can I get to the orange balloons?

Um, I'm afraid of heights! What could my other two wheels be so I can avoid the balloons?

How many more do I need to get to the blue balloons?

I'll land on the balloons!

I'll end up on the balloons...

I will land on the balloons.

Can you help me reach the pink balloons?

$\frac{1}{3}$   
 $\frac{1}{3}$   
 $\frac{1}{3}$   
 $\frac{1}{3}$   
 $\frac{1}{3}$

$\frac{1}{2}$   
 $\frac{2}{2}$   
 $\frac{2}{2}$   
 $\frac{2}{2}$

$\frac{4}{4}$   
 $\frac{4}{4}$   
 $\frac{4}{4}$   
 $\frac{4}{4}$

$\frac{2}{3}$   
 $\frac{3}{3}$   
 $\frac{3}{3}$   
 $\frac{3}{3}$   
 $\frac{3}{3}$



# CRANK PIES

How many fourths would make one whole?

$$\square \times \frac{1}{4} = \bigcirc$$

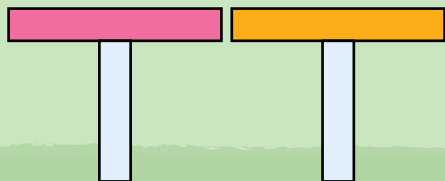
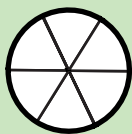
How many sixths would make one whole?

$$\square \times \frac{1}{6} = \bigcirc$$

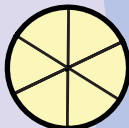
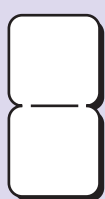
I noticed some similarities between these two problems...



$$10 \times \frac{1}{6}$$



There are so many ways to make



$$\square \times \frac{4}{6}$$

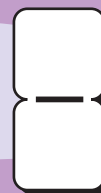
$$\square \times \frac{1}{6}$$

$$\square \times \frac{1}{3}$$

One way I can make  $\frac{18}{8}$  is



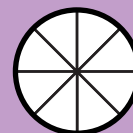
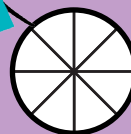
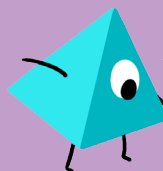
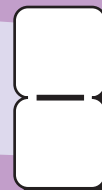
$\times$



Here's another way:



$\times$



$$\frac{12}{8} = \square \times \frac{1}{8}$$

$$6 \times \frac{2}{3} = \begin{array}{|c|} \hline \square \\ \hline \square \\ \hline \end{array}$$

$$5 \times \begin{array}{|c|} \hline \square \\ \hline \square \\ \hline \end{array} = \frac{5}{3}$$

$$2 \times \begin{array}{|c|} \hline \square \\ \hline \square \\ \hline \end{array} = \begin{array}{|c|c|} \hline \bigcirc & \bigcirc \\ \hline \end{array}$$

# NUMBER LINE TRAP



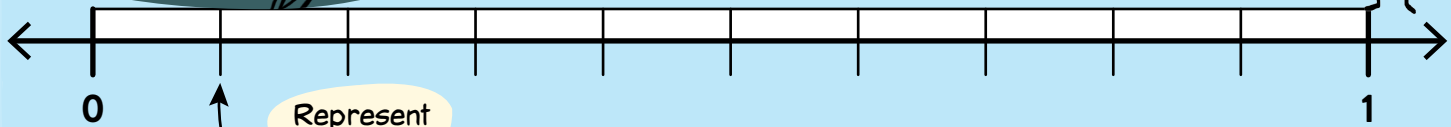
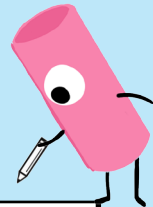
I can represent this value four different ways:

- as a bar model,
- a fraction,
- a decimal,
- on the number line.



$$= \left\{ \begin{array}{c} \phantom{0} \\ \phantom{0} \end{array} \right\} = \boxed{\phantom{0.}}$$

Where does this value go? Color it in and mark it on the number line.



Represent this value.



$$= \left\{ \begin{array}{c} \phantom{0} \\ \phantom{0} \end{array} \right\} = \boxed{\phantom{0.}}$$

Decimal	$\boxed{\phantom{0.}}$	$\boxed{\phantom{0.}}$	$\boxed{\phantom{0.}}$	0.2
Fraction	$\frac{9}{10}$	$\frac{7}{10}$	$\left\{ \begin{array}{c} \phantom{0} \\ \phantom{0} \end{array} \right\}$	$\left\{ \begin{array}{c} \phantom{0} \\ \phantom{0} \end{array} \right\}$
Bar Model				

Mark and label each of these values on the number line.

