TOUCHtimes
Student Task Cards

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About the Task Cards

These task cards are designed to complement the teacher led ideas that are detailed in the *TouchTimes* Task Booklet and the *TouchTimes* Task Ideas Booklet, which can both be found on the *touchcounts.ca*. Using the task cards, students have an opportunity to practise the multiplicative ideas that have previously been introduced by the teacher.

Designed to promote student engagement with *TouchTimes* independent of the teacher, these task cards can be used individually or in pairs and are well suited for use as entry or transition tasks, as math station activities, or as a way to extend student learning for early finishers. Use them in whatever way works best for the students in your classroom or use them to revisit multiplicative ideas again later in the school year.

There are three categories of tasks:

1) **Explore** - these tasks are exploratory in nature and the intent is to encourage play, while drawing student attention to specific aspects of *TouchTimes* and how it displays aspects of multiplication.

2) **Go for it!** - students are provided with guided tasks to work through, either independently or with a partner.

3) **Record your Ideas** - students are asked to solve specific problems using *TouchTimes* and then record their discoveries through drawings or explanations. Students may do this in their math notebooks or duotangs, on mini whiteboards, or in whichever work space is already established in your classroom.

We hope that this resource will provide a way to keep students independently engaged, thinking and reasoning multiplicatively.

Explore Grasplify:

- What happens when you place your fingers down on the right side first?
- What happens if you place your fingers on the left side first?
- What do you notice?

Explore Grasplify:

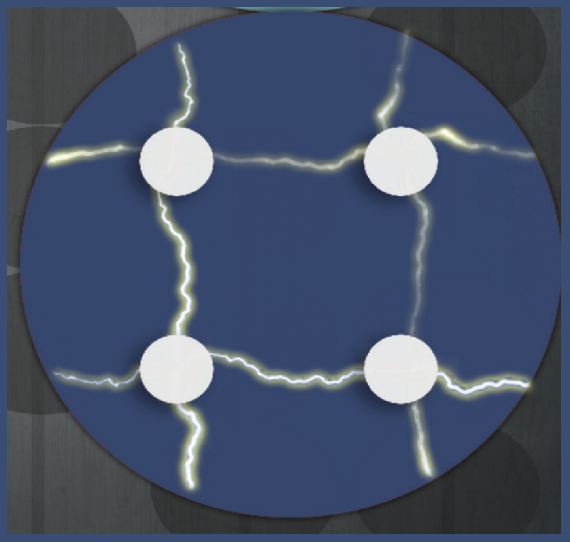
- Can you place many fingers down at once?
- What happens if you do this on the pip side?
- What happens if you do this on the pod side?
- What do you notice about the colours?

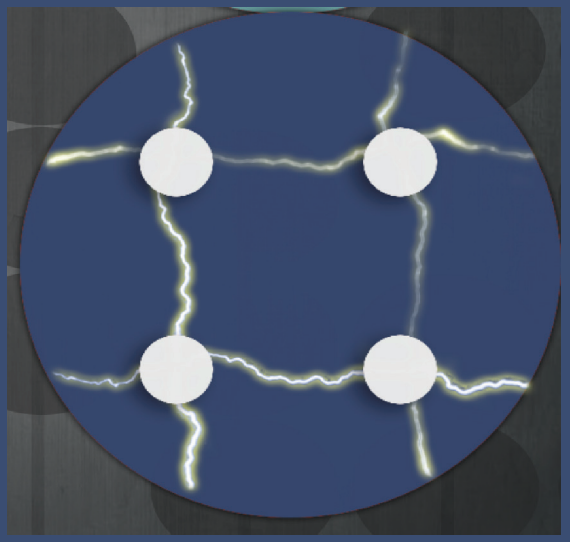
Explore Zaplify:

- What happens if you put your fingers down on the bottom first?
- What if you place them on the side first?
- What do you notice about Zaplify?

Explore Zaplify:

- What do you notice about the numbers on the screen? How did you make them appear?
- Can you place many fingers down at once? Try it on the bottom. Try it on the side. What happens?
- What do you notice about the intersections?





Record your Ideas

I was making 12 loot bags for a birthday party and bought bouncy balls for each bag. Bouncy balls come in packs of 3. Using Grasplify, show how many packages of 3 that I would need to buy. Then draw it.

Going further: What if the bouncy balls came in packages of 4? How about packages of 5?

Record your Ideas

I had 2 magic bags (pods) that I was collecting marbles (pips) in. Each time I create another pip, something magical happens in the pods.

1. Draw a 4 frame comic strip starting with 2 pods and 1 pip.

2. Add another pip. Draw this in frame 2.

3. Add another pip. Draw this in frame 3.

4. Add another pip. Draw this in frame 4.

Going further: Make another 4 frame comic strip with a different number of pods. Show what happens each time another pip is added.

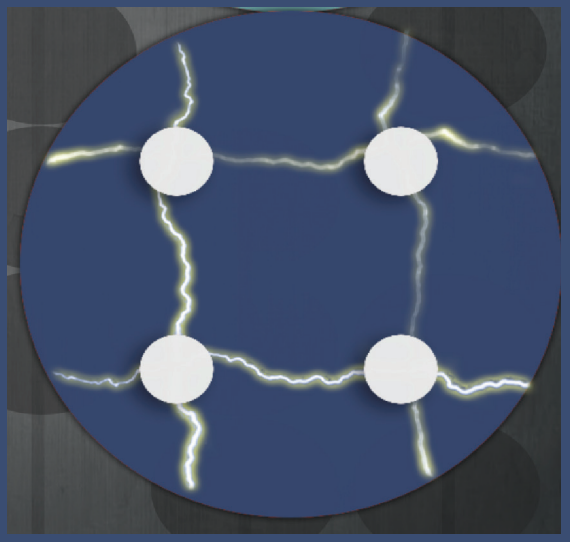
Go for it!

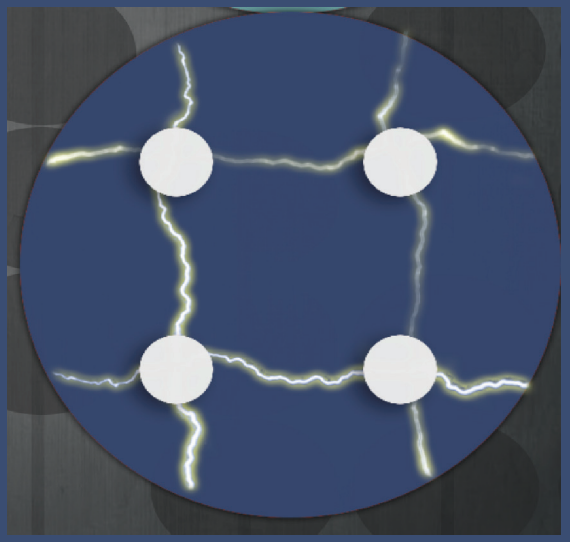
- Make a product of 1 using Zaplify. Can you do it another way?
- Find the 6 different ways to make a product of 20 using Zaplify.
- Make a product of 15.
  Hint: There are 4 different ways to do it.

Record your Ideas

There are 5 juice boxes in a package. Using Zaplify, determine how many packages I would need to buy for a class of 20 kids? Draw it.

Going further: What if there were 17 kids in the class? How many packages would I need to buy?





Go for it!

There are 4 boxes of Smarties in a package. Use Grasplify to show how many boxes you would get in 8 packages.

Going further: How many boxes would be in 4 packages? 7 packages?

10 packages?

Go for it!

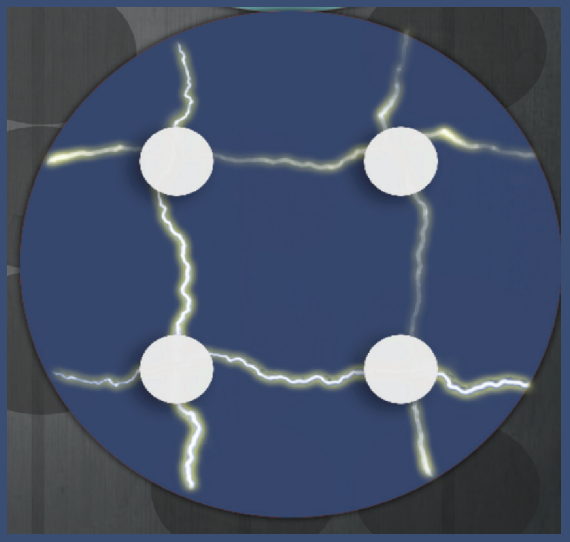
- In Grasplify, start with 3 = 3 x 1
- Double the product so that it's 6.
- Can you double it with only 1 touch?
- Double 6 for a product of 12.
- Can you double it with only 2 touches?
- Double 12 for a product of 24.
- Can you double it by changing the pips?
- Can you double it by changing the number of pods?

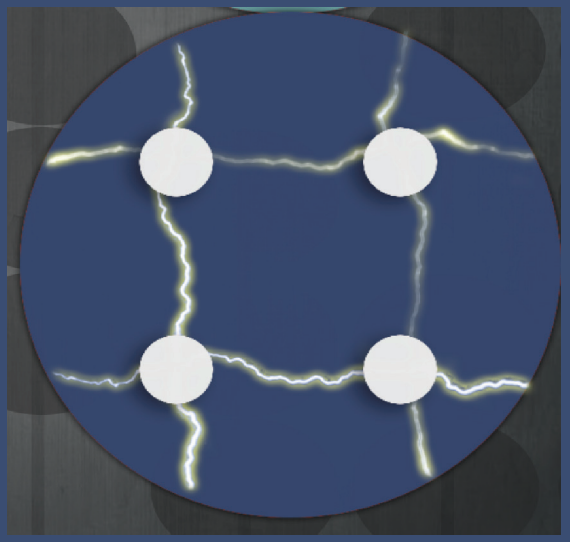
Go for it!

- Using Zaplify, make a product of 12 in 6 different ways.
- How many different ways can you find to make a product of 13?
- How many different ways can you find to make a product of 28?

Go for it!

- In Zaplify, Finn used 8 fingers to make 15. What are the 2 possible ways he could do this?
- Finn found 7 different ways to make a product of 24 but thought he was missing some. Are there any others?





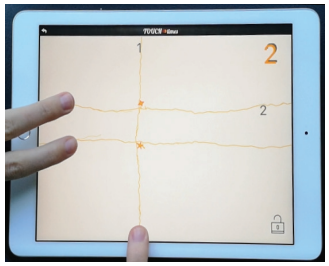
Go for it!

Emma made 6 x 10 = 60 in Grasplify. Show two different ways to split the product in half to get 30.

Go for it!

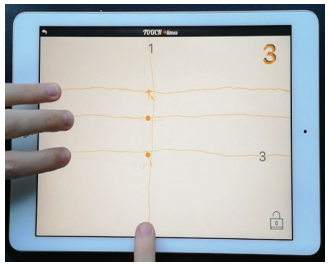
- Start with 40 = 5 x 8 or 8 x 5 = 40.
- Without resetting Grasplify, split the product in half so that it's 20.
- How many fingers do you need to take off the screen to get 20?
- Halve the product so that it's 10.
- How many fingers did you lift off the screen now?
- Halve the product again to get 5.
- What do you notice about how many fingers you removed?
- Try it again from the beginning.

Record your Ideas

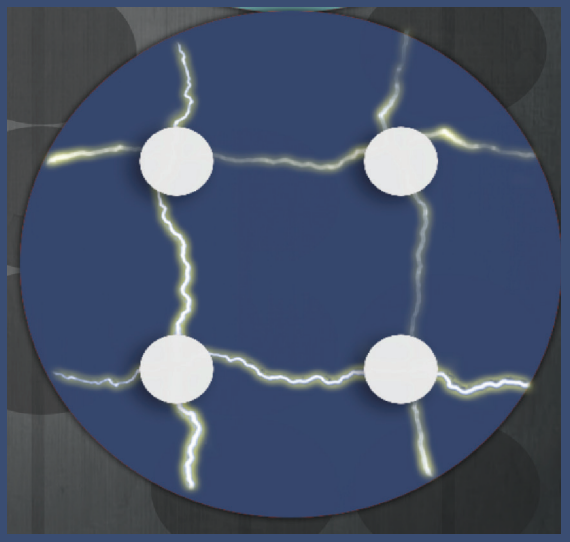


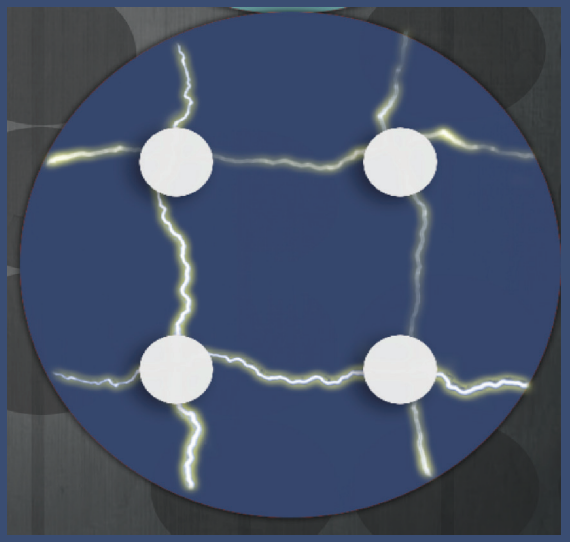
- These photos show 2 ways to make a two-ple.
- Draw a five-ple. Can you make it another way?
- How many intersection points are there?
- Draw a four-ple two different ways.
- How many points can you create on 1 line? What would you name a line with that many points?

Go for it!



- This is one way to make a three-ple. Find another way to make a three-ple.
- Create 1 more line to make a product of 6. What happens on the horizontal lines? How many points are there now?
- Create another line to make a product of 8. What happens to the vertical lines? How many more points are there?





Record your Ideas

Draw a 4 frame comic strip to show each step of doubling by **only changing the number of pips** in Grasplify.

1. Start with 1 x 2 = 2 or 2 = 2 x 1. Draw this in frame 1.
2. Double the product to make 4. Draw this in frame 2.
3. Double the product again to make 8. Draw this in frame 3.
4. Double the product again to make 16. Draw this in frame 4.

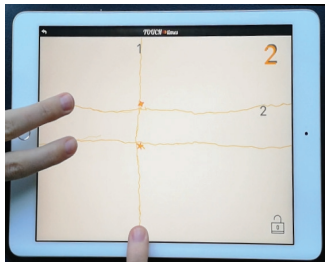
Going further: Draw another 4 frame comic strip to show each step of doubling by only **changing the number of pods.**

Record your Ideas

Draw a 4 frame comic strip showing each step.

1. Liam used Grasplify to make 1 x 5 = 5. Draw this in frame 1.
2. He placed another pip-finger down. Draw this in frame 2.
3. Then he made 2 more pips. Draw this in frame 3.
4. He had 8 pip-fingers in total. Draw this in frame 4.

Go for it!



- Make a two-ple like the photo above.
- Create lines one at a time so that Zaplify skip counts by 2:

  2, 4, 6, 8, 10, 12, 14, 16, 18

- Skip count by 2 as high as you can.

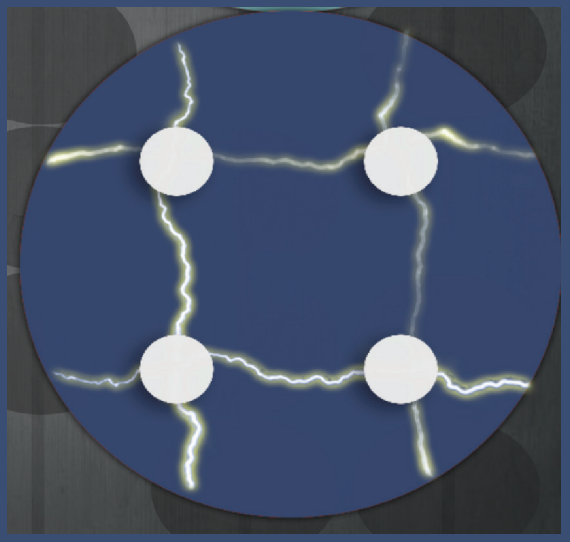
Going further: Start with a five-ple. Skip count by fives until you get to 30.

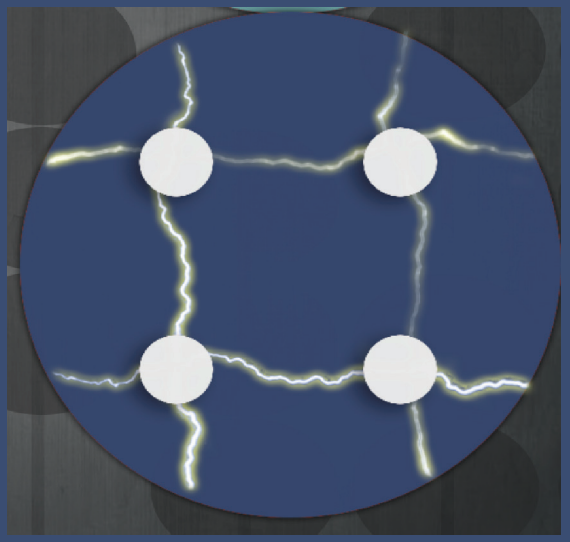
Go for it!

- In Zaplify, with a partner, make a product of 28.
- Skip count backwards by 4

  28, 24, 20, 16, 12, 8, 4

Going further: Make a product of 28 using different factors (numbers), what other numbers can you skip count backwards by? Hint: There are 3 other ways, can you find them all?





Go for it!

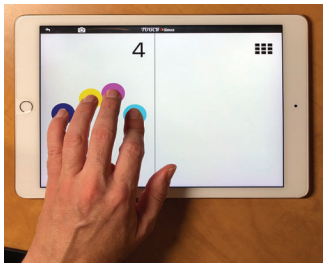
1. Make 1 pod with 7 pips in it (this is called a 7-pod).
2. Double check that you didn't make 7, 1-pods.
3. Now make a 10-pod.

Going further: Draw a picture showing how to make 1 bag with 6 bouncy balls in Grasplify. Be sure to draw the pips AND the pods. Don't forget to colour in the pips like Grasplify would.

Record your Ideas

Lily put pip-fingers down on the screen, like the first picture. If her partner Mia puts one pod-finger down, draw what the pod would look like.

- What colours would be in the pod?
- How would the pips be arranged in the pod?



Go for it!

- In Zaplify, skip count by tens to 100 by increasing the number of vertical lines.
- How many horizontal lines will you need to create first so this will work?
- Add one line at a time when skip counting so you only see these numbers in this order:

10, 20, 30, 40, 50, 60, 70, 80, 90, 100

- Keep skip counting as high as you want to.

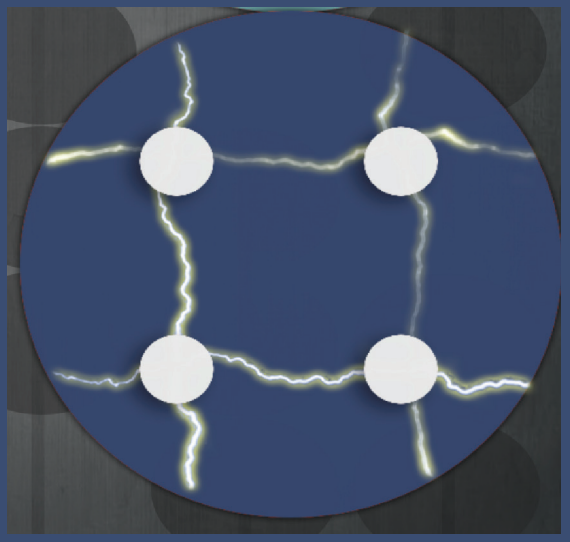
MAKING 198 WITH:	
Two-ples	
Three-ples	
Four-ples	
Five-ples	
Nine-ples	

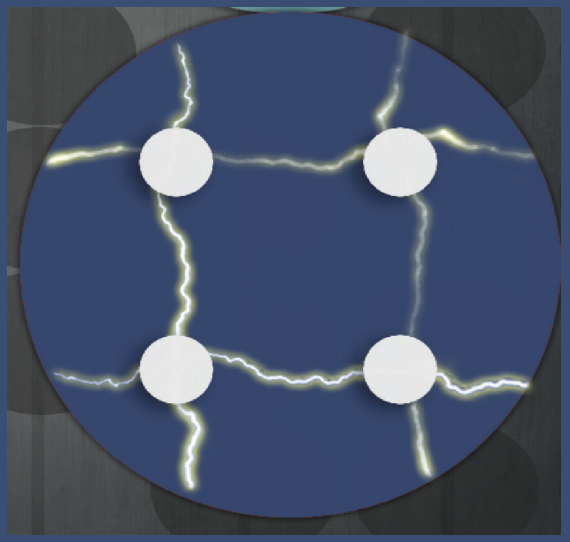
Go for it!

How many ways can you make the product 198?

Can you make it with:

- Two-ples?
- Three-ples?
- Four-ples?
- Five-ples?
- Nine-ples?





Go for it!

In Grasplify, figure out how to skip count by 3 in two different ways.

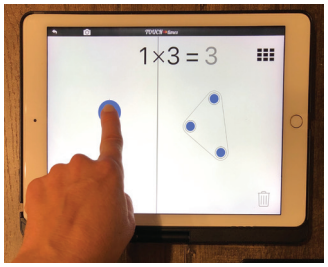
3, 6, 9, 12, 15, 18, 21, 24, 27, 30

One way starts with 3 pips, but how many pods do you start with? The other starts with 3 pods but how many pips do you start with? Experiment with this.

Record your Ideas

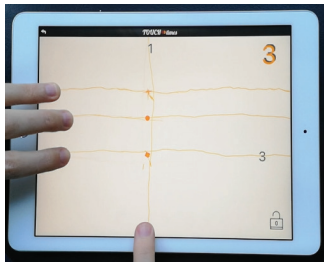
Alex created the pips and pods in this photo.

1. Draw a picture showing what the screen would look like after Alex places two more pip-fingers on the left side of the screen.



Going further: Draw another picture showing how the screen would look if Alex created 3 more pips and made 1 more pod.

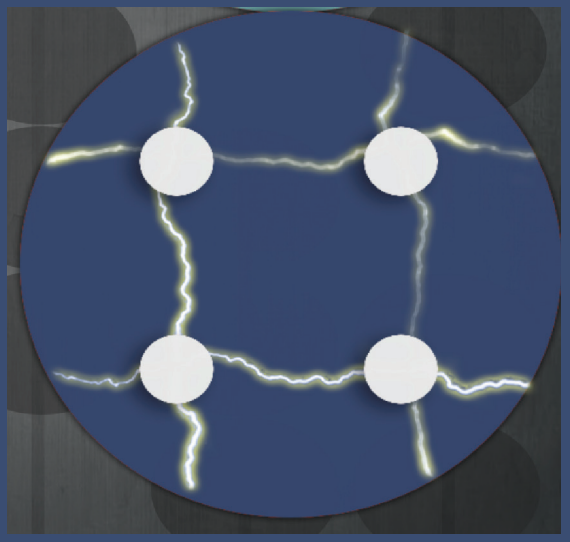
Record your Ideas

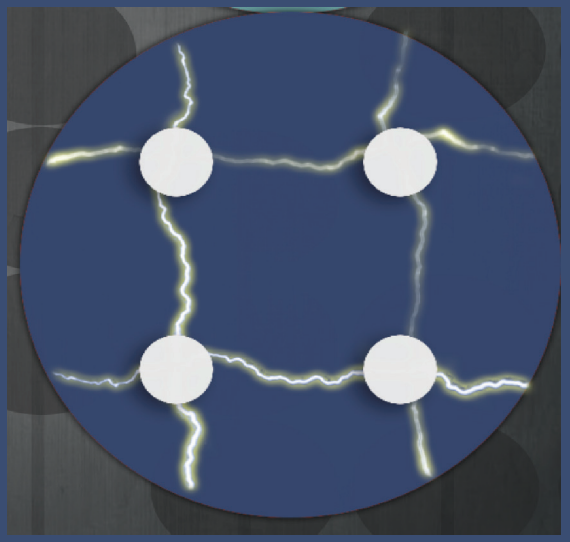


1. Draw a 4 frame comic strip starting with this photo showing a product of 3.
2. Double the product to make 6. Draw this in frame 2.
3. Double the product to make 12. Draw this in frame 3.
4. Double the product to make 24. Draw this in frame 4.

Go for it!

- Create a product of 16 using Zaplify.
- How many fingers do you have to lift at the same time to halve the product to 8?
- How many fingers will you lift at once to halve the product again to make 4?
- How many fingers will you lift to halve the product to make 2?
- How many fingers will you lift to make the product 1?
- If you lifted your fingers one by one, go back and do this again. Can you do it this time by lifting many fingers at once to halve each product?





Go for it!

In Grasplify, figure out how to count backwards by 5 in two different ways.

50, 45, 40, 35, 30, 25, 20, 15, 10, 5, 0

One way starts with 5 pips but how many pods do you start with? The other starts with 5 pods but how many pips do you start with? Experiment with this.

Record your Ideas

1. Create 4 x 3 = 12 in Grasplify .
2. You can only place 1 more finger on the screen. Do you make another pip or another pod to create the larger product?
3. Draw a picture showing what the product would be if you made another pod.
4. Draw another picture showing what the product would be if you created another pip.

Going further: Experiment with 3 x 7. Which will create a larger product - creating another pip or another pod? Try other multiplication equations. What do you notice?

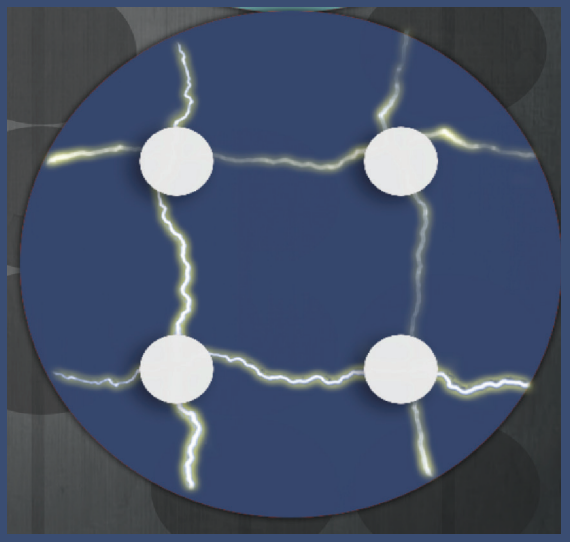
Record your Ideas

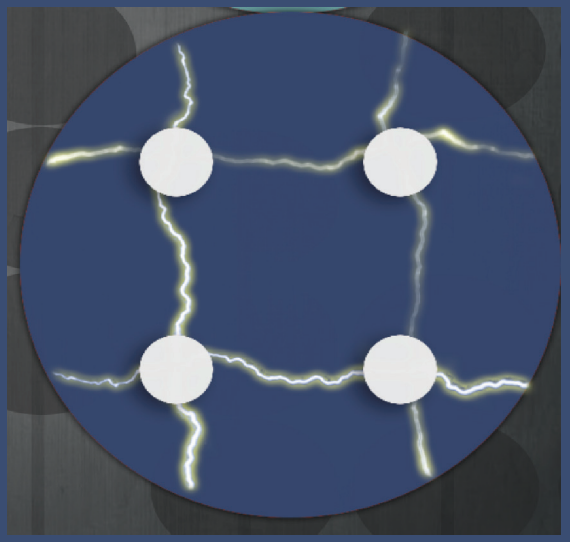
1. Create 4 x 3 = 12 in Zaplify.
2. You can only place 1 more finger on the screen. Do you make another vertical line or another horizontal line to create the larger product?
3. Draw a picture showing what the product would be if you made another vertical line.
4. Draw another picture showing what the product would be if you created another horizontal line.

Going further: Experiment with 3 x 7. Which will create a larger product - creating another vertical line or another horizontal line? Try other multiplication equations. What do you notice?

Explore Zaplify

- Start by making a product of 4 like the photo.
- Create another vertical line. What happens?
- Create another horizontal line. What happens?
- How many new points will appear if you create another vertical line. Try it. Were you right?
- How many new points will appear if you create another horizontal line. Try it. Were you right?





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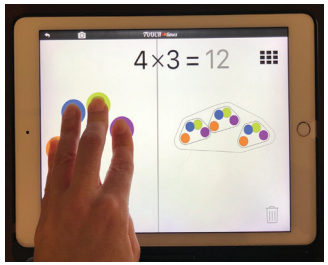

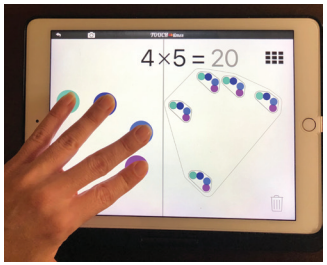

I can figure out 4 x **8** = 32 by finding 4 x **3** = 12 and then finding 4 x **5** = 20. Hint: 8 breaks apart into 3 and 5. I then combine the 2 products 12 + 20 = 32.

Experiment with 4 x 8 = 32. Find two other ways to break the 8 apart to get a product of 32.

Explore Grasplify

- Is it possible to make an odd product by multiplying even numbers? Why or why not?
- Is it possible to make an even product by multiplying even numbers? Why or why not?
- Is it possible to make an even product by multiplying odd numbers? Why or why not?
- What happens when you multipy an even and an odd number together? Is your product even or odd? Why is this?

Explore Zaplify

- Is it possible to make an odd product by multiplying even numbers?
- Is it possible to make an even product by multiplying even numbers?
- Is it possible to make an even product by multiplying odd numbers?
- What happens when you multiply an even and an odd number together? Is your product even or odd?

Go for it!

- In Zaplify, make a product larger than 16 using only 8 fingers.
- Make the largest product possible using only 7 fingers.
- Make the largest product possible using 11 fingers.