⚙ **SETTINGS**

For this task, make sure that the Numeric Factor Values and the Numeric Product Values are turned off in settings.

✏ **TEACHER TIP**

Make sure that students group the sets of pods that they create and that they take a screenshot of their solution.

✏ **TEACHER TIP**

Students can turn the Numeric Product Values back on to verify their solutions.

# Rearranging Pods

## Summary

In this task students explore using the disembedding method to find different multiplication number sentence combinations. When using the disembedding method, students are breaking the whole into parts that are easier to manipulate or think about and then putting them back together into a whole to determine the product. For example, one way of disembedding 8 x 6 could be 8 x 5 = 40 and 8 x 1 = 8, which makes a product of 48.

## Tasks

1. Project Grasplify onto a screen for the class to view. Tell students, *I bought some cases of pop at the store. There are 6 in each case and I bought 5 cases.* Using student suggestions, model what that would look like using Grasplify.

2. Say, *I had 30 bottles but then my daughter asked me to buy two more cases because she wanted to try two other flavours. How can I use Grasplify to model or show this scenario? And how many bottles will I now have in all?* Work through this as a class.

3. Students will use the disembedding method to create the following number sentences in Grasplify, using combinations of other number sentences that they already know. Have students record their number sentence combinations on mini whiteboard to keep track of how many different combinations that they discover.

<div align="center">

6 x 8

9 x 13

17 x 11

13 x 21

</div>

## What to Watch For

- Some students will want to remove the original 5 pods and make 2 pods instead. Create 6 x 5 for students to see. Remove your fingers to reset the screen and then create 6 x 2. Comment that, These are easy products to find, 30 and 12.

- From 6 x 5, others may suggest placing 2 additional pods on the screen. Encourage them to set the 2 new pods slightly apart from the 5 existing ones.

## Questions to Ask

- *How would you describe this as a multiplication equation?*

- *So, can I figure out 6 x 7 by first finding 6 x 5 and then finding 6 x 2? What do you think? When we break multiplication equations apart like this, it's called disembedding.*

- *Are there other ways that we can figure out 6 x 7 by using this disembedding method?*

- Encourage them to discuss why they like certain disembeddings more than others.

## Extending Student Learning

- Once pairs who have successfully found different number sentence combinations for each of the given number sentences, challenge them to figure out the product for each.

- Early finishers can be invited to make up a set of factors of their own choosing.

## Assessment

Tasha took this screenshot. Write down the multiplication equation and explain how she used disembedding to find the product.