

Grade 1: The Disappearing Train

(From: SuperSource K-2, Snap Cubes, Page 78)

Big Idea	Curriculum expectations
<p>Addition and Subtraction Making Predictions Collecting and Organizing Data L'addition et la soustraction Faire des prédictions La collection et l'organisation des données</p>	<p>D1.3 display sets of data, using one-to-one correspondence, in concrete graphs and pictographs with proper sources, titles, and labels</p> <p>D1.4 order categories of data from greatest to least frequency for various data sets displayed in tally tables, concrete graphs, and pictographs</p> <p>D1.3 représenter des ensembles de données, en utilisant la correspondance un à un, à l'aide de diagrammes concrets et de diagrammes à pictogrammes comprenant des sources, des titres et des étiquettes appropriés.</p> <p>D1.4 ordonner, en fonction de leur fréquence, de la plus élevée à la plus faible, des catégories de données appartenant à divers ensembles de données présentées dans des tableaux de dénombrement, des diagrammes concrets ou des diagrammes à pictogrammes.</p>
Learning Goals	Success Criteria
<p>Students will...</p> <ul style="list-style-type: none">• explore subtraction, concrete models and symbolic number sentences as they remove snap cubes from a cube train.• use tally marks to track the number of rolls made• Create a graph that will give them practice collecting and analyzing data from a situation they have created. <p>On apprend:</p> <ul style="list-style-type: none">• à explorer la soustraction en utilisant des objets concrets en enlevant des cubes emboîtables du "train".• Utiliser un tableau de dénombrement pour garder le compte du nombre de lancers de dé qui ont été faites• Créer un graphique afin de pratiquer la collection et l'analyse	<p>I can...</p> <ul style="list-style-type: none">• Subtract from 20 using snap cubes and dice• Use tally marks to track my rolls• Create a graph from the data I collected• Soustraire de 20 en utilisant des cubes emboîtables et un dé.• Utiliser des marques de dénombrement pour garder le compte• Créer un diagramme à partir des données que j'ai collectées.

des données.

Materials

- Snap cubes (20 per pair)
- Die (1 per pair)
- [Snap cube grid paper](#)
- Cubes emboîtables (20 par paire)
- Dé (1 par paire)
- Papier quadrillé pour les cubes emboîtables)

Math Language / Vocabulary

- Subtract **soustrait**
- Predict **prédit**
- Tally **dénombrement**
- Graph **graphique/diagramme**
- Number Sentence **une phrase mathématique**
- Greater than **plus que**
- Less than **moins que**

About the Math

This activity gives children practice with subtraction as they calculate how many cubes they have left to remove. The concrete model reinforces the symbolic number sentences that they write. Looking at snap cubes remaining in their trains, children predict which numbers they need to make the train disappear. Keeping a tally of the number of rolls and making a class graph will also give them practice in collecting and analyzing data from a situation that they have created.

If children have done the activity a sufficient number of times, the shape of the class graph should begin to resemble a normal curve. It will require at least four rolls of the die to make the twenty-cube train disappear because the greatest number that can occur with each roll is 6, and so the greatest number that can be rolled on three rolls is 18. Theoretically, the greatest number of rolls could be 20 if the number 1 came up each time the die was rolled. More likely, the class graph will reveal a number closer to 10 as the greatest number of rolls.

Having children figure out possible combinations of how to make the train disappear in only four rolls gives them practice in finding multiple representations for a given number.

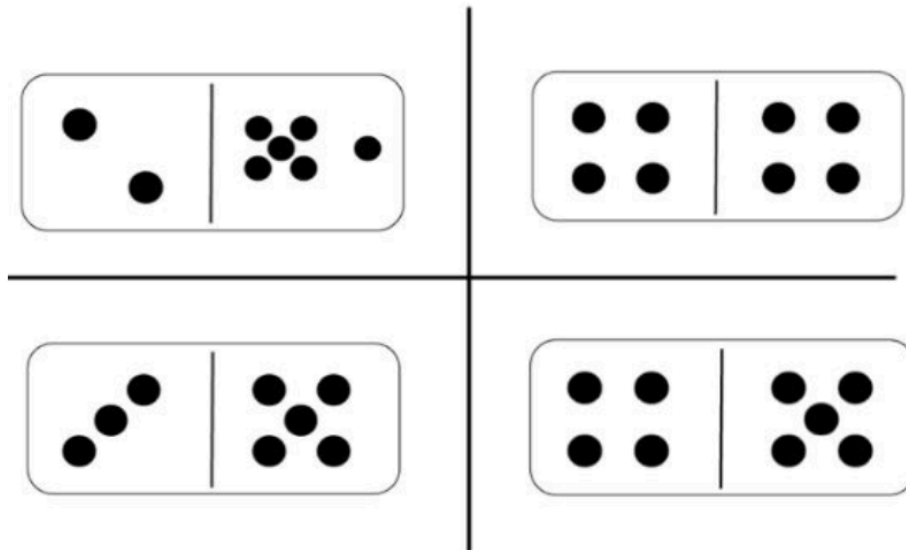
Number Talk

Which One Doesn't Belong (<http://wodb.ca/numbers.html>)

What do you notice?

Which one is different from the others? Why?

Which ones are the same? Why do you think that?



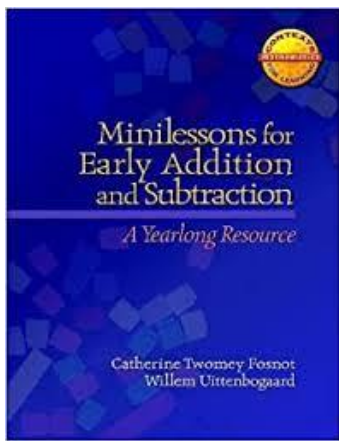
Qu'est-ce que tu remarques?

Lequel est différent des autres? Explique pourquoi.

Lesquels sont pareils? Explique pourquoi.

B2.3 use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 20, and explain the strategies used

Fosnot “Minilessons for Early Addition and Subtraction” / “Mini Lessons for Extending Addition and Subtraction”



Minds On

Build and display a Snap Cube train with ten cubes. (Distance Learning Teachers can use the Mathies colour tile app to create a train of 20 tiles and a [virtual die](#)- you will need to change to a regular dice by clicking on the image of the 4 sided die. It will then provide a drop down menu for you to select a standard die.)

Call on a volunteer to take turns with you at rolling a die. After each roll, remove that number of Snap Cubes from the train. If the number rolled is greater than the number of Snap Cubes left, then roll again.

Continue until all Snap Cubes have been removed and the train has disappeared.

Record each roll on a chart that looks something like this: (distance learning teachers can use whiteboard app to display data OR chart paper)

Roll	Number Rolled	Number Sentence (you could also display this using a number line representation)
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1st	3	$10-3=7$
2nd	5	$7-5=2$
3rd	6	2-6 (impossible)
4th	2	$2-2=0$

Point out that number sentences help to keep track of how many cubes are left.
Repeat the activity with another volunteer.

Action!

How many rolls of the die does it take to make a Snap Cube train disappear? Combien de lancer de dé est-ce que ça prend pour faire disparaître le train.

- With a partner, build a Snap Cube train that is 20 cubes long.
- One partner keeps rolling the die and removing exactly that number of cubes from the train until there are no cubes left.
- The other partner keeps a record of how many rolls of the die it takes to make the train disappear. He or she writes a number sentence to show what happens after each roll. If the number rolled is greater than the number of cubes left in the train, count that roll even though you can't remove any cubes.
- Switch roles and repeat the activity several times.
- Compare your recordings. Try to predict how many rolls you would need to make your train disappear if you did the activity again.
- Avec un partenaire, construit un train 20 cubes emboîtables de long
- Une personne roule le dé et enlève le nombre de cubes représenté sur le dé, jusqu'à ce qu'il ne reste plus de cubes.
- L'autre personne garde en note combien de rouler de dé que ça prend avant que le train disparaisse.

***Distance learning students will use the Mathies colour tile app to build a 20 tile train. They will independently roll the virtual die and record their findings on paper or virtual whiteboard.

Consolidation

After children have completed the activity, ask pairs to share the number of rolls it took to make one of their trains disappear. Prepare a graph by first identifying columns by writing the numbers 4 to 10 across the bottom of the chalkboard. Then record each pair's response with an "X" in the appropriate column.

For example:

How Many Rolls it Took to Make the Train Disappear

x x x	x x x x	x x x	x x x x	x x x x x	x x	x x
4	5	6	7	8	9	10

Use prompts like these to promote class discussion:

- *What information can you learn from this graph?*
- *Why couldn't you make the train disappear with just three rolls?*
- *What do you think is the greatest number of rolls it would take to make the train disappear? Why?*
- *What do you think is the least number of rolls it would take to make the train disappear? Why?*
- *What might the number sentences look like if it took four rolls to make the train disappear?*
- *Why didn't anyone need 21 rolls to make his or her train disappear?*
- *Quelle information est-ce qu'on peut apprendre de ce graphique/ce diagramme?*
- *Pourquoi est-ce que le train ne disparaît pas en trois rousers?*
- *Quel est le plus grand nombre de rousers possible pour faire disparaître le train? Explique pourquoi.*
- *Quel est le plus petit nombre de rousers possible pour faire disparaître le train? Explique pourquoi.*

Independent Tasks / Assessment Opportunities

Ask children to imagine that one pair started the activity by first rolling a 4 and then a 3. Have them draw a picture of what that pair's train looked like then.

Tell children that it took one pair six rolls to make its train disappear. Then ask children to write a number sentence that this pair might write to show how its train disappeared.

[Primary SEL Self Assessment](#) (English) [Primary SEL Self Assessment](#) (French)
[SEL Teacher Rubric](#)

Extension Activities

Have children repeat the activity starting with a train built with more than 20 snap cubes.

Have children repeat the activity, this time using a pair of dice. For each roll, they should find the sum of the numbers rolled and subtract that number of Snap Cubes from the train.

Technology

Mathies Colour Tile app



Explain Everything



Virtual Dice

Throw

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