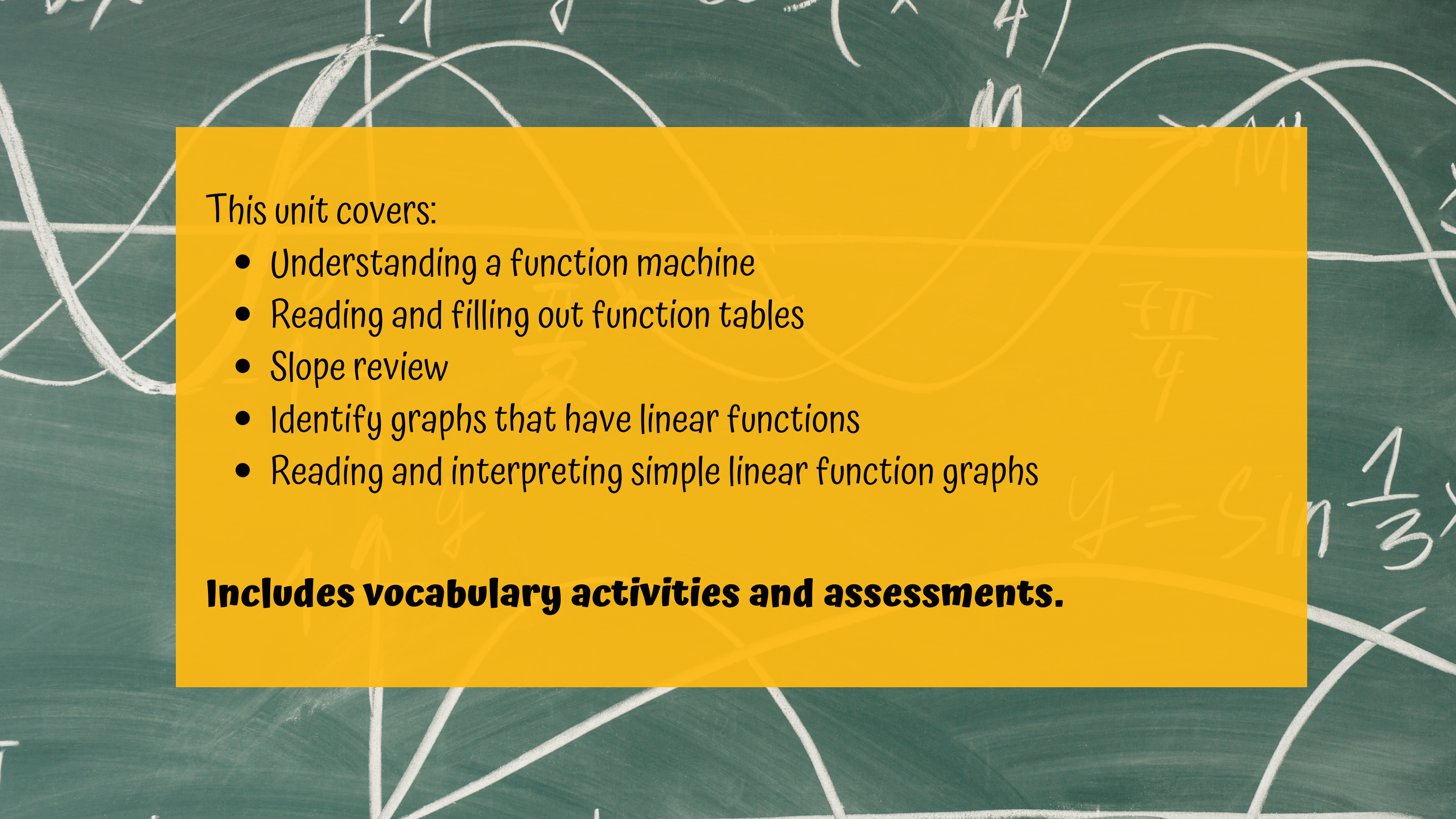
SPECIAL ED

INTRO TO LINEAR FUNCTIONS

INCLUDES GOOGLE SLIDES

For students who:

- are emerging or non-readers
- take alternate assessments
- are in special education
- short-attention span
- lack pre-requisite skills
- benefit from the use of pictures for support
- middle/high school



This unit covers:

- Understanding a function machine
- Reading and filling out function tables
- Slope review
- Identify graphs that have linear functions
- Reading and interpreting simple linear function graphs

Includes vocabulary activities and assessments.

Table of Contents

Pages	Activity
4-42	Function Machines (book)
43-45	Vocabulary board
46-52	Vocabulary cards
53-66	Vocabulary cut and paste
67-95	Function worksheets
96-124	Function tables
125-165	Linear Functions (book)
166-177	Linear function worksheets
178-186	Ordering slopes
187-201	Reading linear function graphs
202-213	Vocabulary Sudoku
214-231	Assessment
232-233	Terms of Use

Also included with this unit is a power point show that is narrated and has automatic advancement of slides. Let me know in the feedback if this was helpful ☺

This unit has 18 days of activities that will guide students through:

- Functions machines
- Linear functions

The unit is separated into 2 files, one in color and one in black and white.

Introductory

Day 1

Activity	Notes	Materials
Read or listen to a recording of the book: Function Machines (15 minutes)	• Since this is the first time students are seeing the book, I focus a lot on the pictures ○ Ask lots of questions about what they might think the pictures mean or may relate to • Make connections between book and vocabulary board (have students find relevant symbols on their boards to go with a concept or photo on page.) • Go through the book twice, once just looking at the photos and a second time reading the story	• Book #1: Function Machines • Vocabulary board
Function Vocabulary cards (5 minutes)	• This first day, I am just introducing and allowing the students to explore/look at the cards • *NOTE: Just use the cards that are labeled function machine for now* • Make connections between cards and vocabulary board (have students matching symbols on the board)	• Vocabulary cards (function machine set) • Vocabulary board
Worksheet practice #1 (10 minutes)	• Do one of the worksheets from the set: Functions Practice • Choose the best version depending on the learning level of your students (see worksheet directions for more details) • Add color coding if needed • Students complete the worksheet • Make connections to the book as necessary	• Worksheet • Scissors • Glue
Worksheet practice #2 (10 minutes)	• Do one of the worksheets from the set: Function Tables • Choose the best version depending on the learning level of your students (see worksheet directions for more details) • Add color coding if needed • Students complete the worksheet • Make connections to the book as necessary	• Worksheet • Scissors • Glue
Sharing (10 minutes)	• Each student shares one of their finished worksheets with the group using the communication method of their choice • This repetition is so important. Students are hearing the relevant vocabulary when:	• Completed worksheets • Communication devices

The lesson plans contain:

- Overall tips for teaching students with significant needs
- A quick look at what you will do each day
- Detailed instructions on how that day's lesson should run

You put your money in, and out comes a snack or a soda.

That is an example of a function machine.

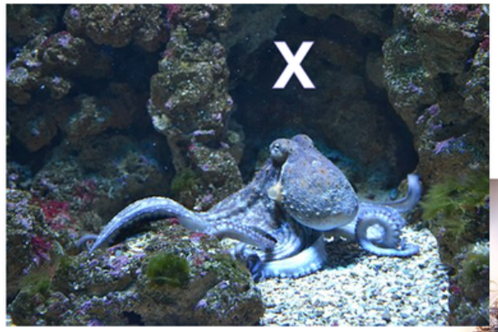
There are 2 books with this unit. They use photos and simple text appropriate for older students.

1. Function Machines
2. Linear Functions

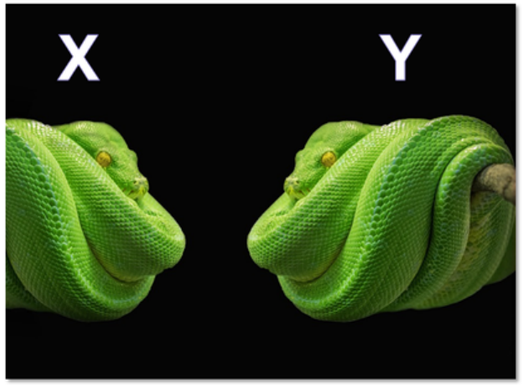
Come in:

- PowerPoint
- voice-recorded PPT
- mp4 movie format

Imagine x = 1 octopus. And y= 8 legs (the number of legs almost every octopus has.)



Every time x changes, it changes y. They are dependent upon each other.



function

Relationship between 2 things that does not change.

Function machine

function machine

System that takes an input value, applies a rule, and comes up with a new output value.

Function machine

function rule

Defines how the input is changed. It remains constant for each machine.

$f(x) = y$

Function machine

input value

The starting value. What goes into the function machine.

Function machine

function

Relationship between 2 things that does not change.

Function machine

function machine

System that takes an input value, applies a rule, and comes up with a new output value.

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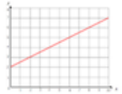
graph



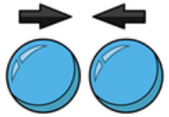
Linear function

variables

$\frac{x}{y}$

Linear function

dependent

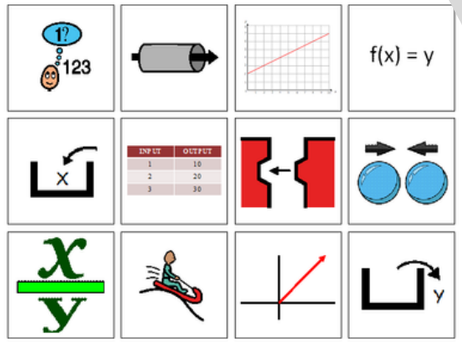


Linear function

slope

Linear function

Cut apart and match pictures with definition.

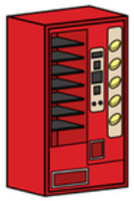


There are 12 vocabulary cards students will use every day for a group activity. There is also a cut and paste activity.

Real-world examples

Snack machine

You want to get a snack after school. You go to the vending machine, and put in 50¢ and out comes a bag of chips. Use this information to fill out the function table and other information below.



Input value (X) = ☐

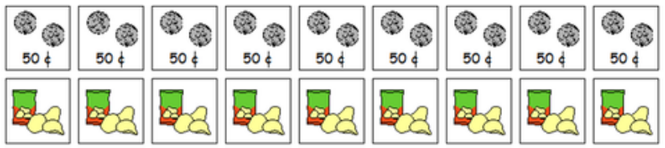
Output value (Y) = ☐

Function Rule: ☐ will get you ☐

X Y

Input (X)	Output (Y)
50 ¢	1 bag of chips
$1.00	
$1.50	
	4 bags of chips

Snack machine



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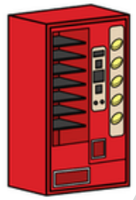


Input value (X) = ☐

Output value (Y) = ☐

Function Rule: ☐ will get you ☐

X Y

Input (X)	Output (Y)
	
	
	
	

There are 8 worksheets where students will work through a real-world example of a function machine and fill in the table. There are 2 versions for each worksheet. One uses words and one uses pictures. Pictures are available for students to cut out and add to the table.

Finding the function rule

2

Fill out the function table below

INPUT (X)	OUTPUT (Y)
0	5
5	10
10	15
15	
20	
25	
	35

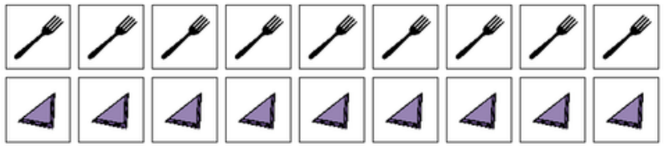
Circle the function rule:

+1

+5

+10

Table 2



2

Fill out the function table below

INPUT (X)	OUTPUT (Y)
	
	
	
	

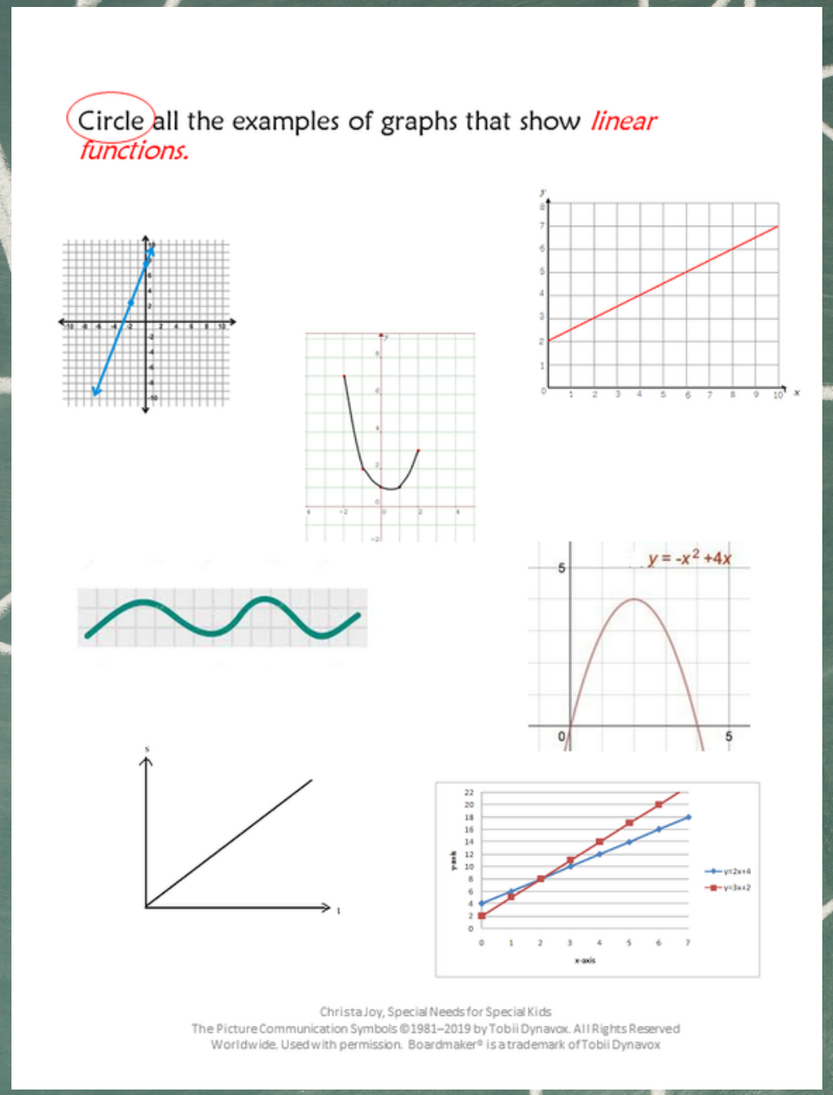
Circle the function rule:

+ 

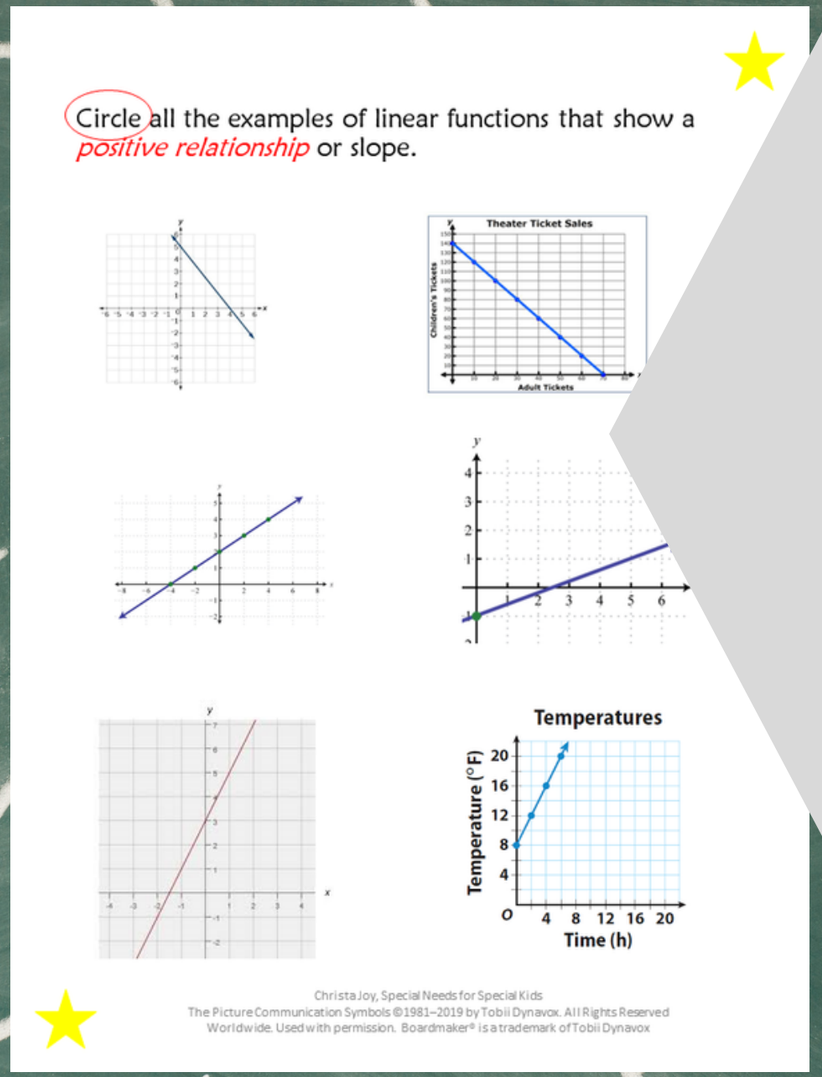
+ 

+ 

There are 8 function tables for students to complete. They are given inputs and outputs. They will complete the table and determine the function rule. Again, 2 versions are provided one that only uses pictures. Pictures are available for students to cut out and add to the table.

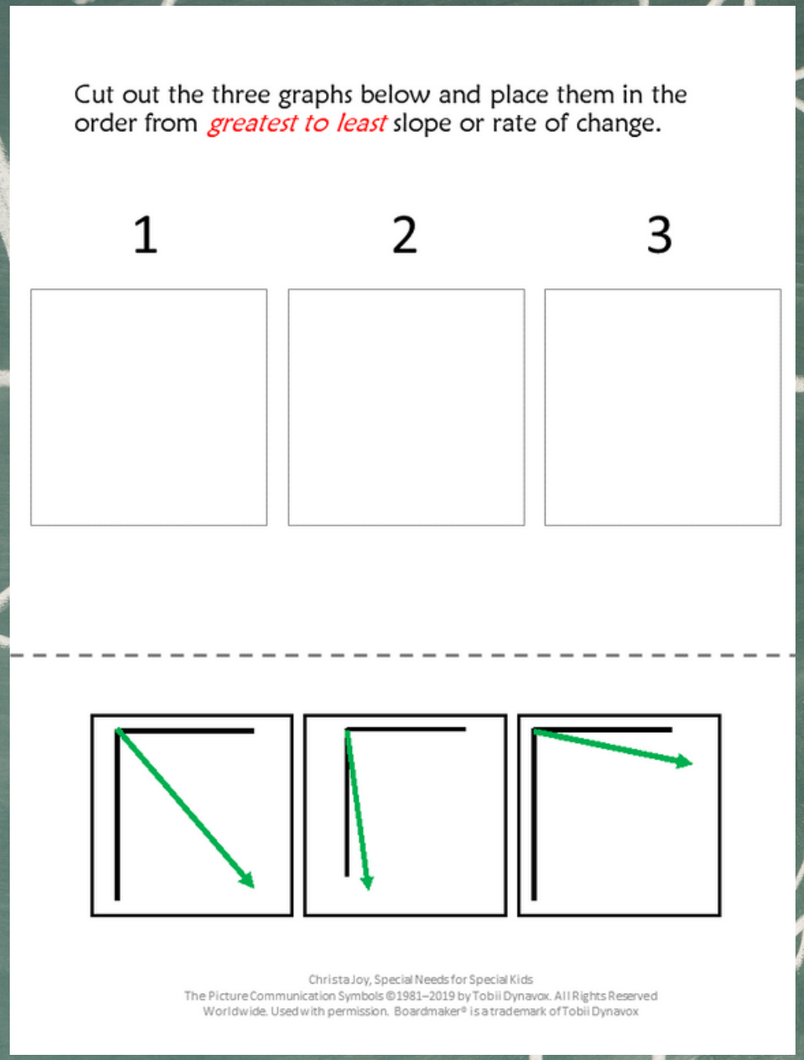


Students use the stars to remind them of the direction for each relationship

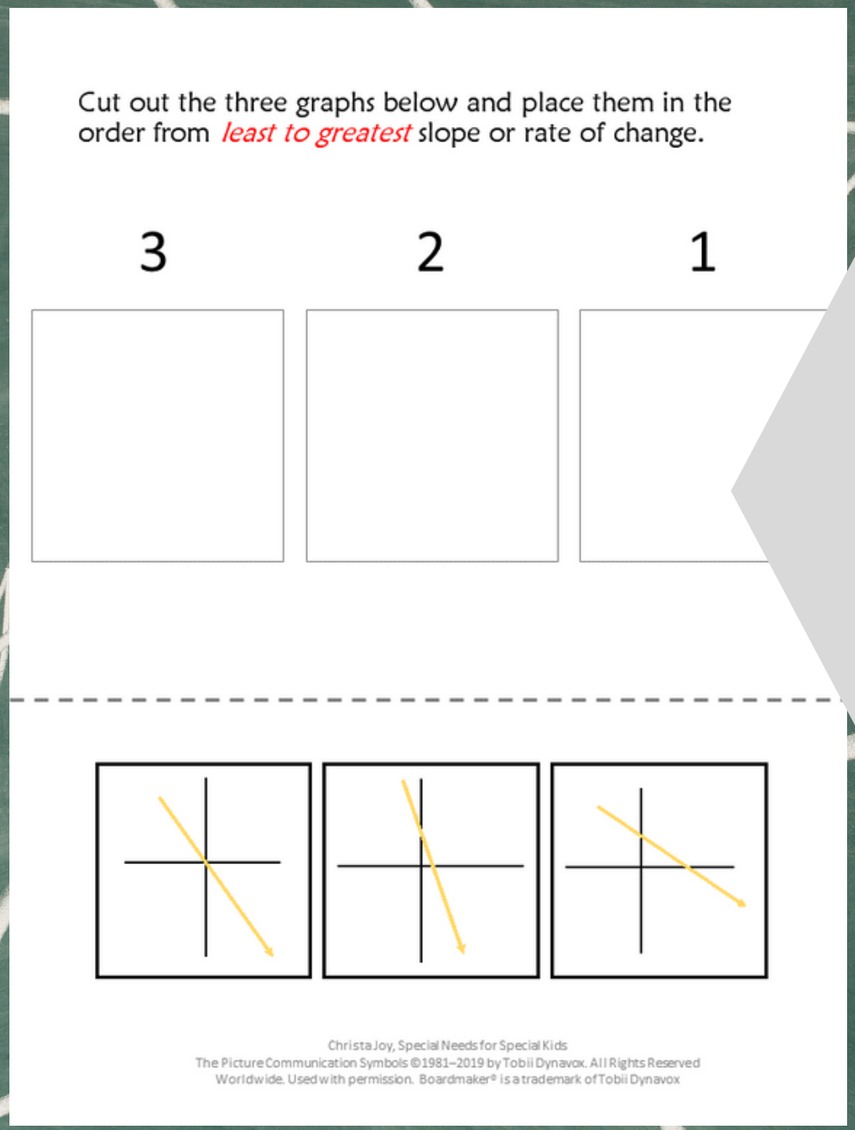


Students will then move on to the second book and look at graphs and slopes. There are 11 worksheets that have various graphs where students need to identify certain types of graphs.

Slope review


Cut out the three graphs below and place them in the order from *greatest to least* slope or rate of change.

1 2 3

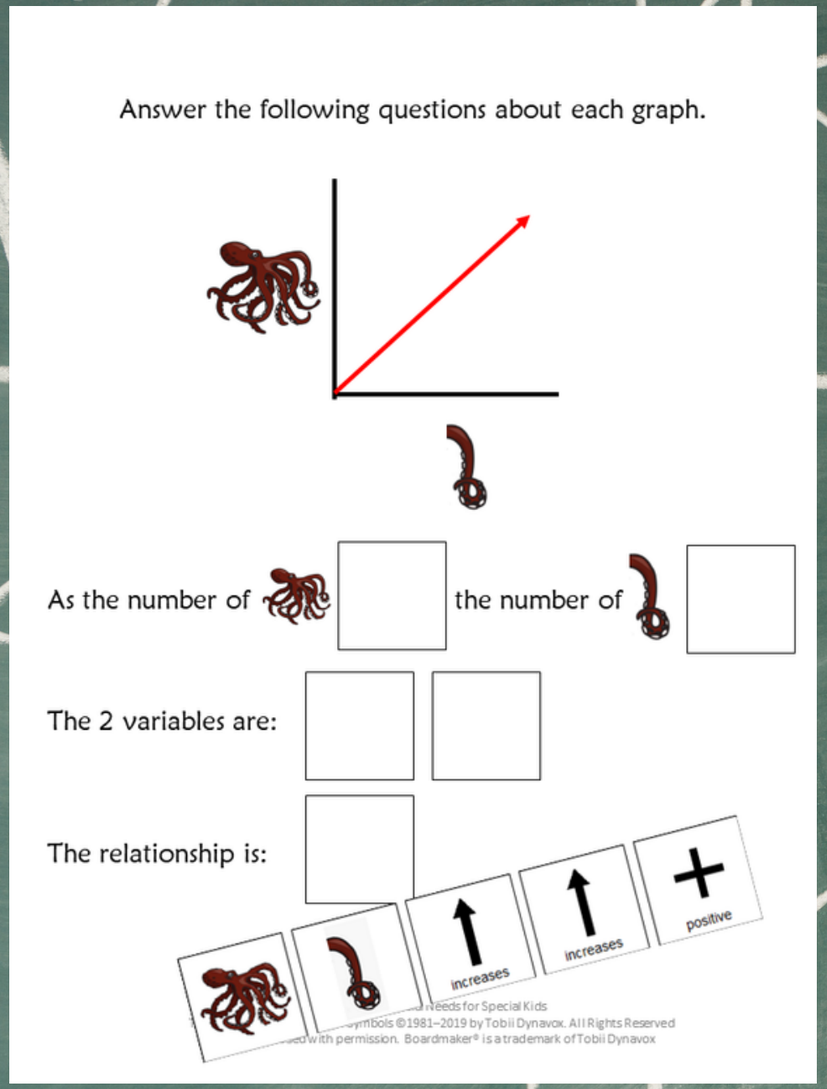

Cut out the three graphs below and place them in the order from *least to greatest* slope or rate of change.

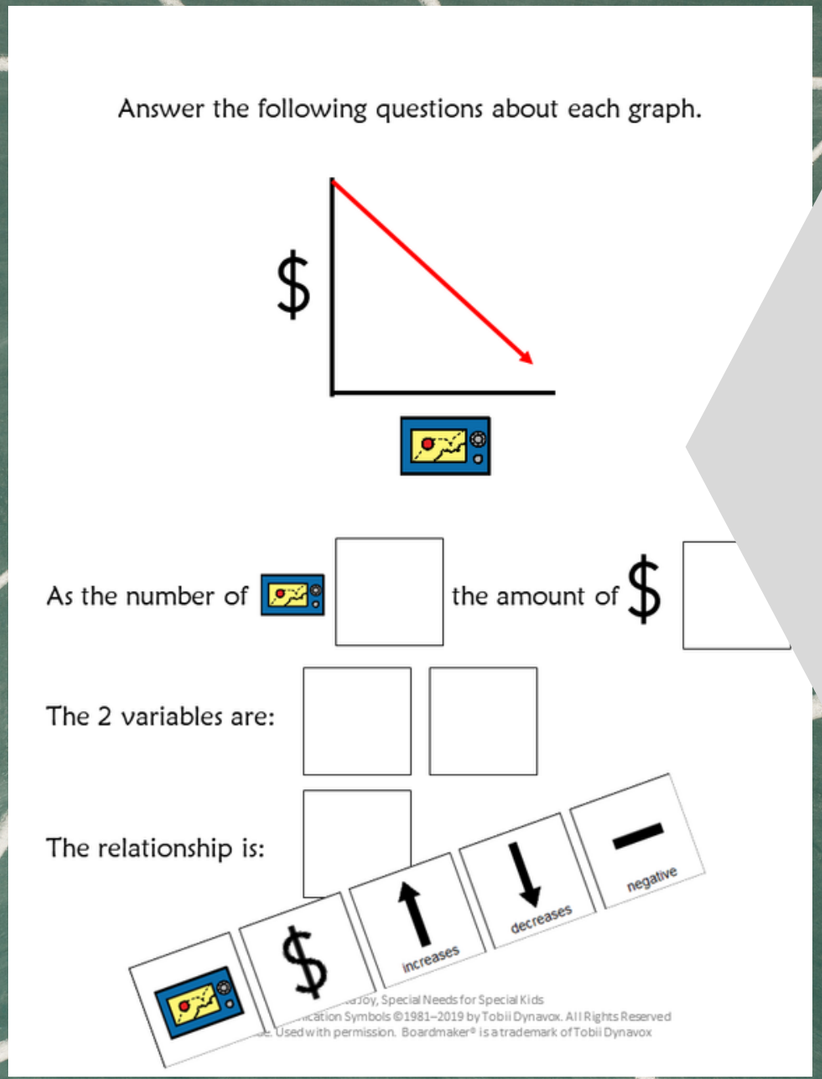
3 2 1

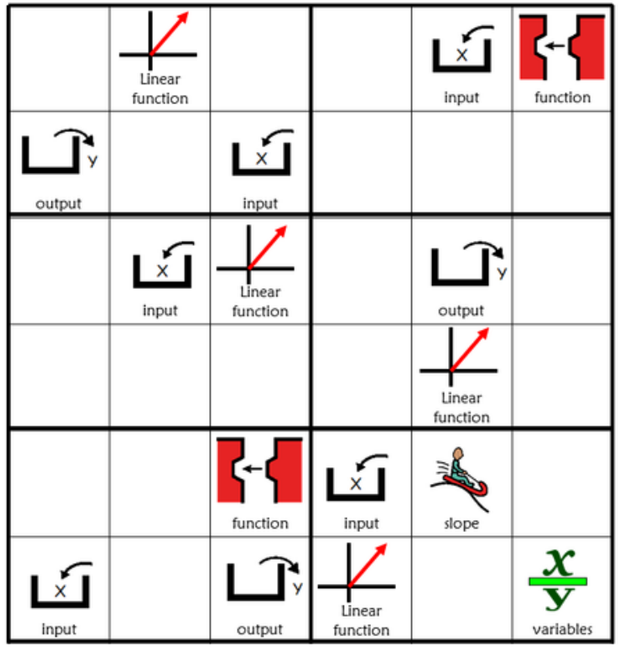
There are 8 worksheets where students will place the lines in order from least to the greatest (or greatest to least) slope. Again, in this introductory unit students are NOT calculating slope.

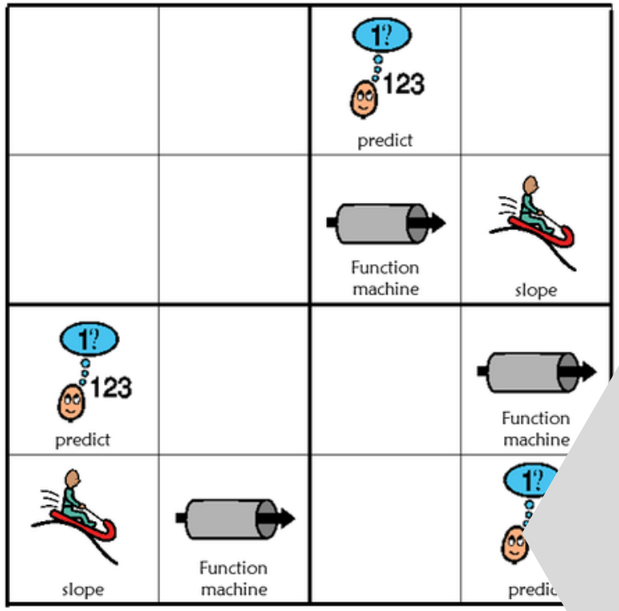
Reading linear graphs

In this final activity, students will explore how the change of one variable affects the other and what the line looks like on a graph.

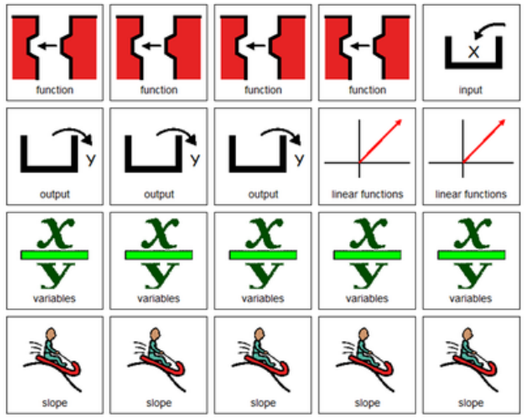








Place the following images in the empty squares on the previous page, completing the sudoku puzzle.



There is a Sudoku puzzle in this unit as well. This is a great way to work with the new vocabulary!!

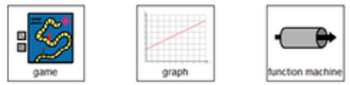
There are 2 versions (6x6 and 4x4) plus answer keys.

Version 1

1. A function describes the relationship between two things that:

2. The value you start with is called the:

3. A snack machine is an example of a:



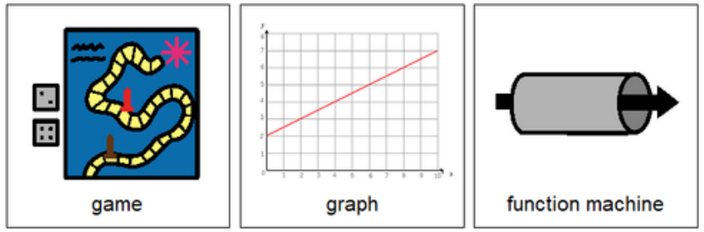
4. If you mow a lawn for $10, what is the output v

5. This tool is helpful in showing and predicting wl the function rule is:

Version 2

Print onto cardstock or mount on index cards. Cut pictures apart and show student answer choices for each question.

Q 3



Version 3

1. A function describes the relationship between two things that:
   A. Stays the same
   B. Changes
   C. grows
2. The value you start with is called the:
   A. Gas
   B. Input
   C. Function rule
3. A snack machine is an example of a:
   A. Game
   B. Graph
   C. Function machine
4. If you mow a lawn for $10, what is the output value?
   A. Lawn
   B. $10
   C. neighbor
5. This tool is helpful in showing and predicting what the function rule is:
   A. Function table
   B. Calculator
   C. Computer
6. A linear function on a graph is ALWAYS a:
   A. Straight line
   B. Bumpy line
   C. Curve

Covers main ideas

FINALLY the assessment!! There are 3 versions.

- 10 questions with 3 picture choices for each question
- cut out the answer choices and glue them on index cards
- traditional multiple choice

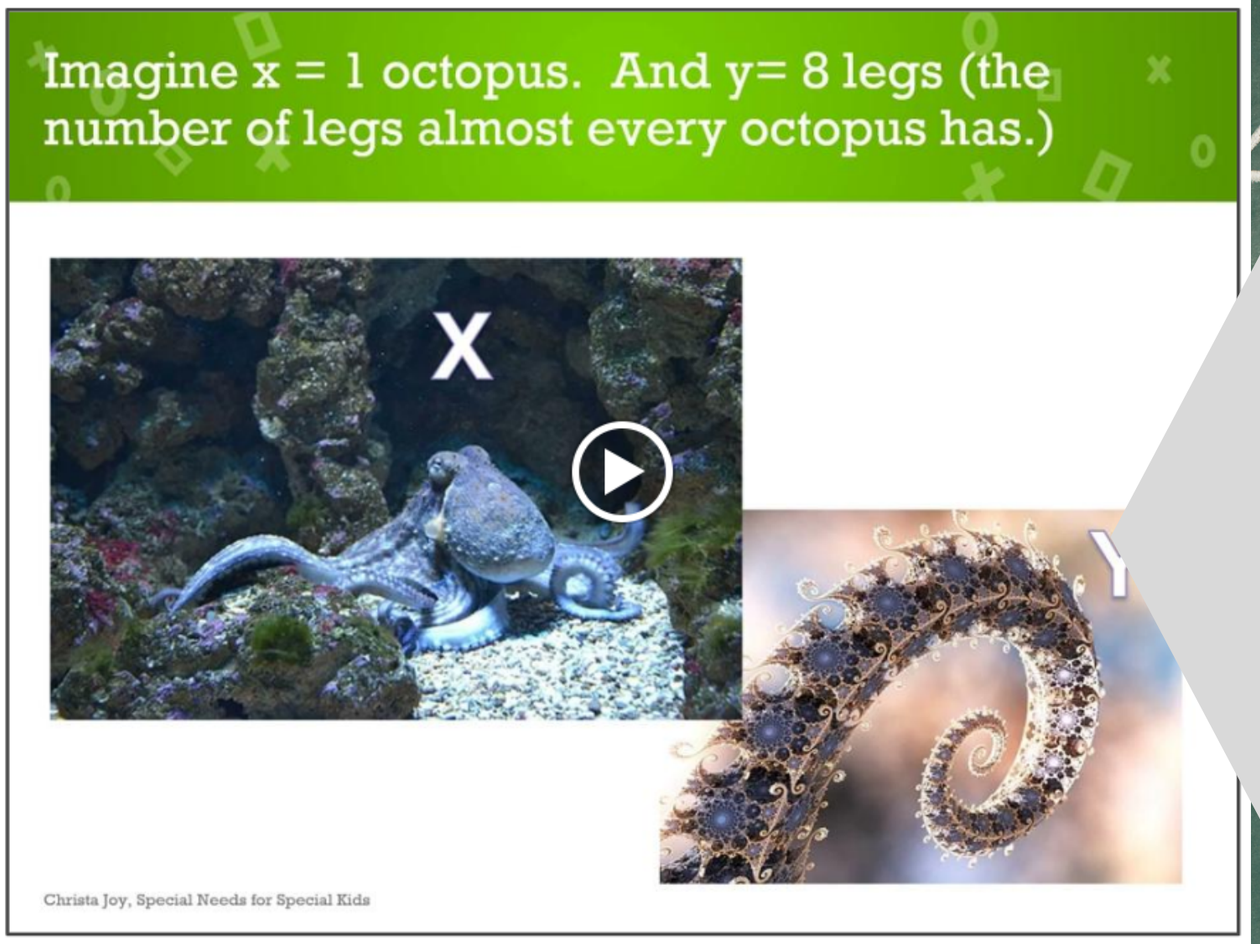
Answer key included.

This resource comes in a zipped folder. You will need to unzip the folder to access all the contents which include:

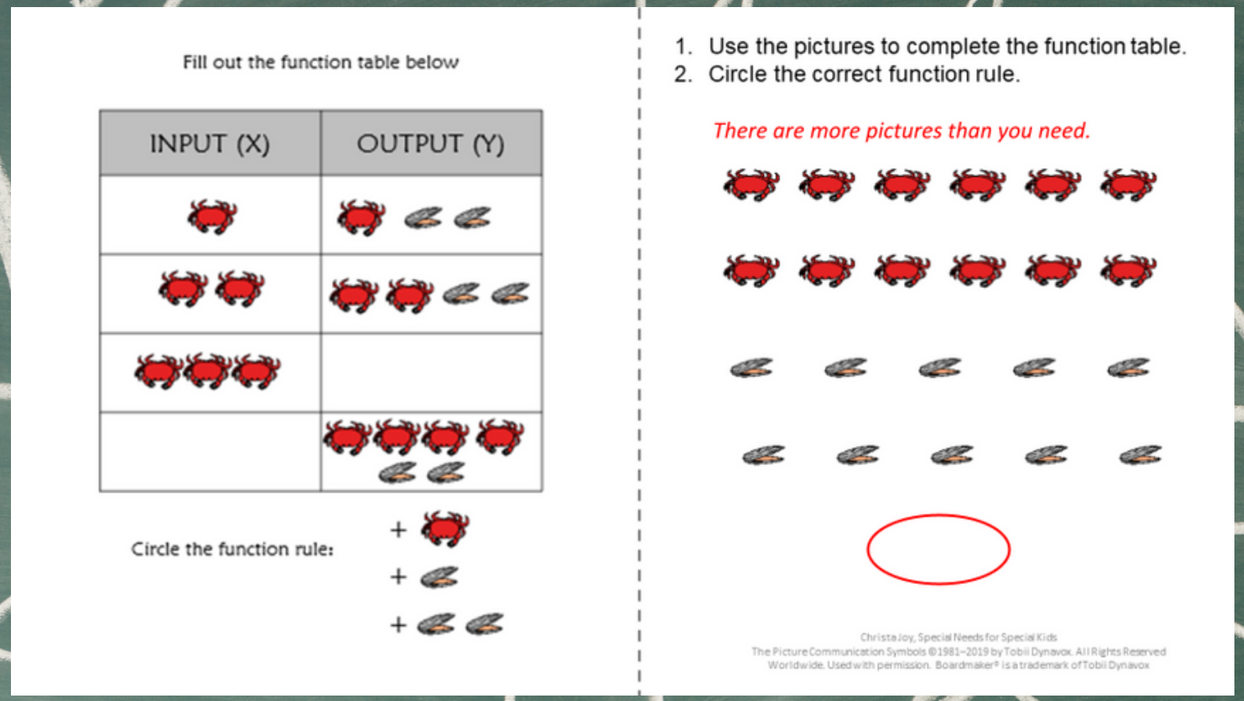
- 18 days of lesson plans
- Color version of activities
- Black and white version of activities
- Function Machines book (PowerPoint) to use with activities
- Linear Functions book (PowerPoint) to use with activities
- Digital versions of activities

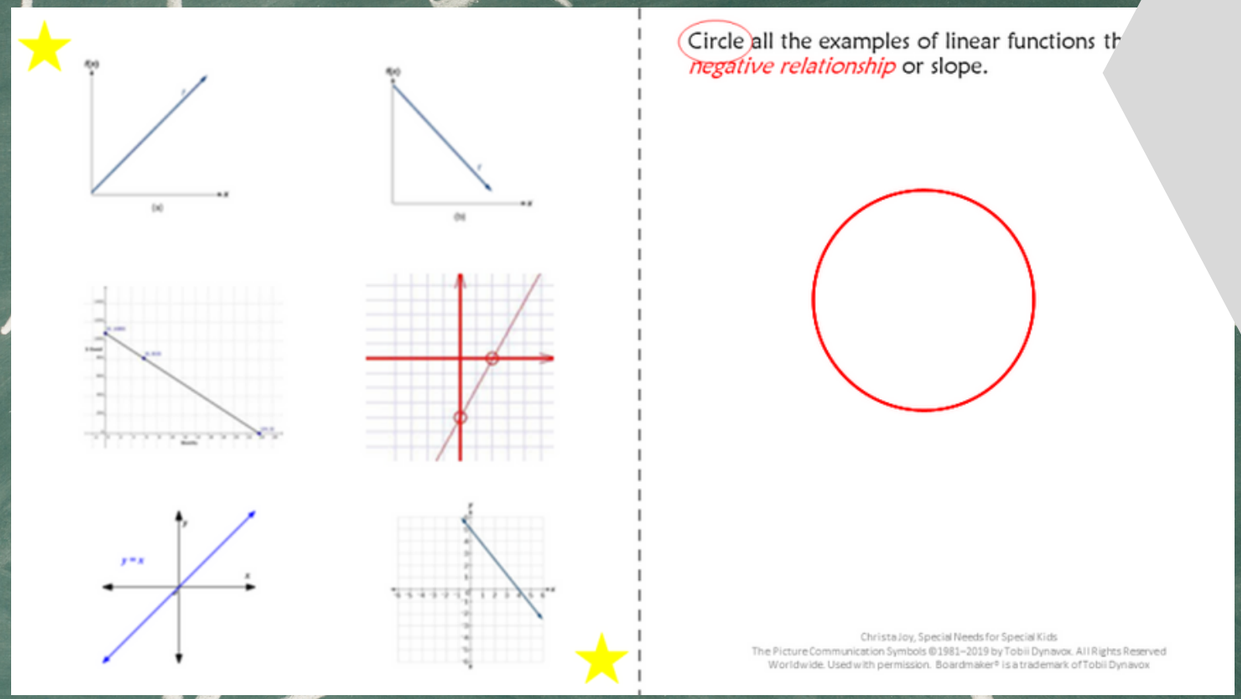
Also digital activities

Watch the video on Linear Functions



This unit also has digital activities. There is a movie version of the books students can listen to read aloud.



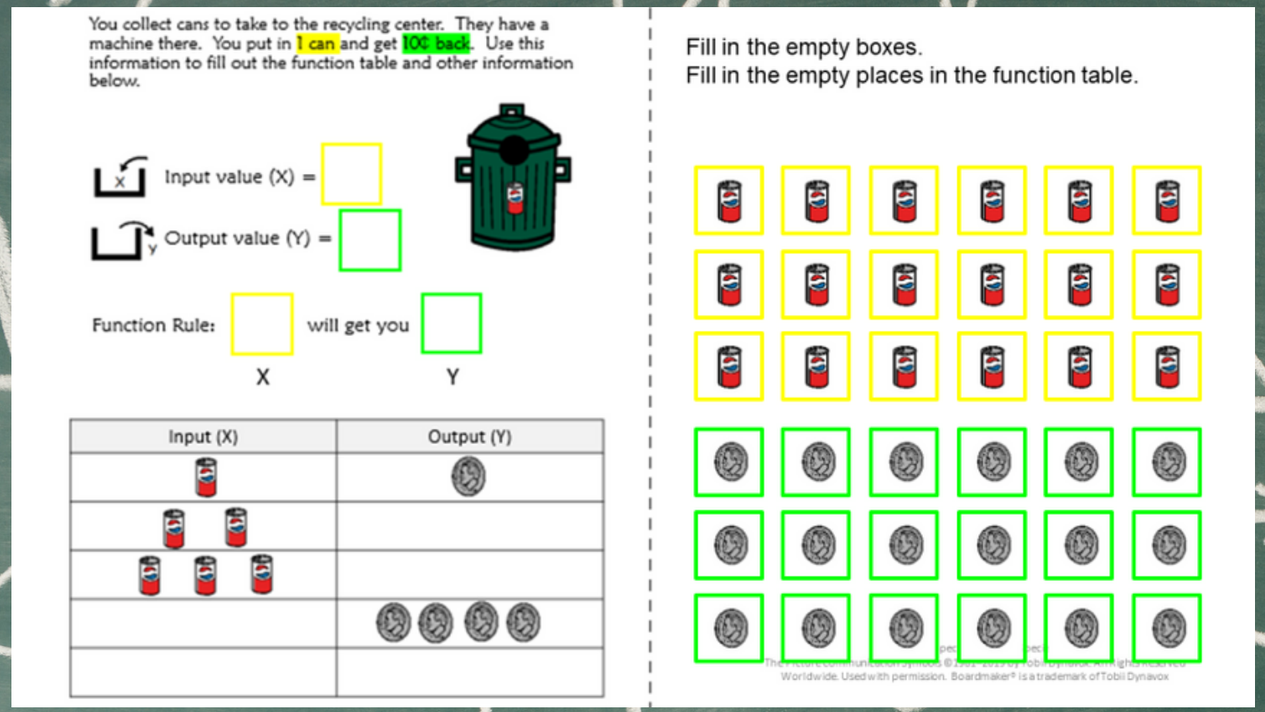


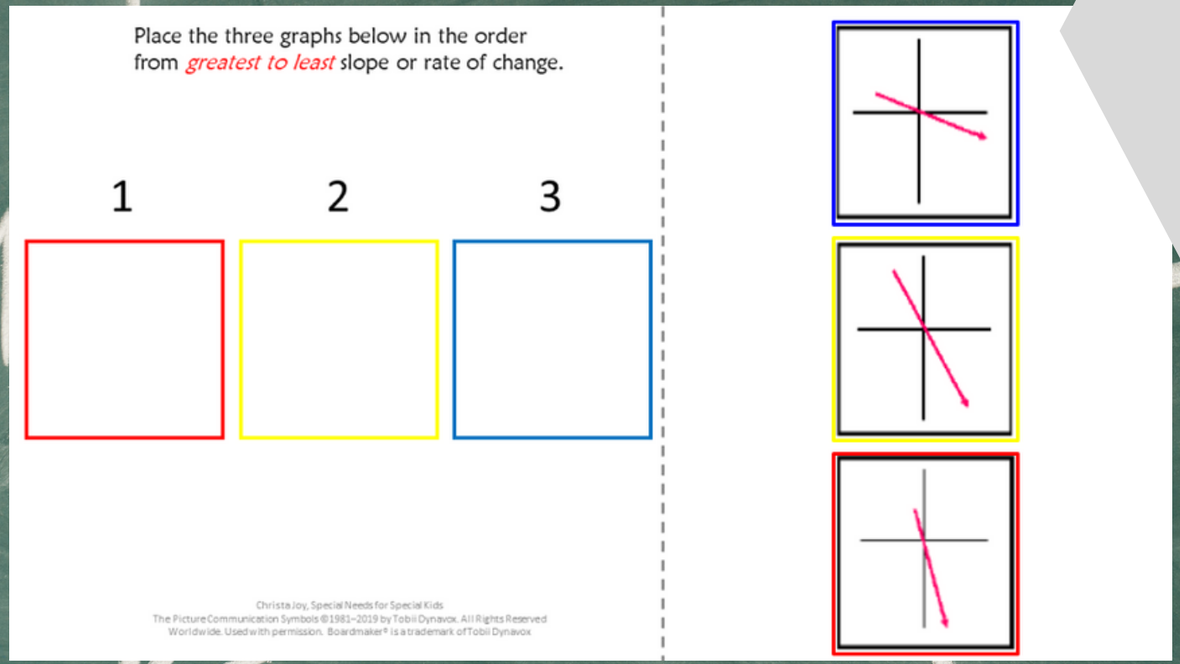
Great for review

The digital activities have students click and drag their answers. There are 2 sets of 57 slides.

Perfect for every learning level

The second set of slides is differentiated using color.





SAVE MONEY AND GET THIS UNIT AS PART OF THE LINEAR FUNCTION BUNDLE

CLICK HERE