

OUR EARTH

GRAPHING & DATA INTERPRETATION MATH PROJECT

Use data interpretation and graphing to learn how you can make a difference to our planet! Activities include:

- **bar graphs**
 - **picture graphs**
 - **line plots**
 - **charts and tables**
- and more!**

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ABOUT THIS RESOURCE

Are you looking for a way to reinforce graphing and data interpretation concepts in an engaging way that helps your students make connections? "Our Earth" is a **real-life math project** where students will complete eleven different graphing and data-related tasks.

These activities can be used as a package, or in isolation. They work great as a math center, small-group lesson, early finisher activity, or partner activity. This particular project is great for the month surrounding Earth Day.

Take a look at what you'll find inside this math project:

TASK #1: SORTING RECYCLABLES

You've decided to do more to help the environment! You start by sorting the materials in your recycling bin at home. Use the data to create a tally chart. Then interpret it and transfer the data to a line plot.

Skills: tally charts, line plots, transferring data

TASK#2: COLLECTING GROCERY BAGS


Did you know that you can crochet plastic grocery bags together to create a re-usable shopping bag? Your class has decided to collect as many plastic bags as you can for this project. Use the bar graph to answer the questions.

Skills: bar graphs

TASK #1: SORTING RECYCLABLES

You've decided to do more to help the environment! You start by sorting the materials in your recycling bin at home.

All of these recyclable materials are inside the bin. Record the data.



Item	Draw the tallies.

Use the tally chart to answer the questions:

How many more than are there? _____

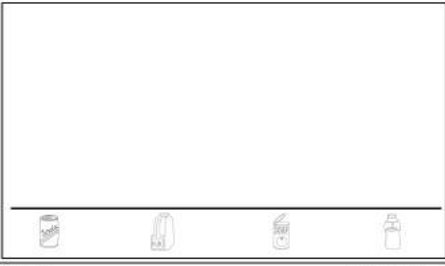
Altogether, how many and are there? _____

Altogether, how many and are there? _____

How many more and than are there? _____

Write two other facts that you know from looking at the tally chart.

Use the data from the tally chart to create a line plot. Use an "x" to represent each item.



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TASK #2: COLLECTING GROCERY BAGS

Did you know that you can crochet plastic grocery bags together to create a re-usable shopping bag? Your class has decided to collect as many plastic bags as you can for this project.

This bar graph shows the number of plastic bags that you collected at school this week. Each space represents 10 plastic bags.

NUMBER OF BAGS COLLECTED

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
10	20	30	10	20

Answer the questions:

- How many bags were collected on Wednesday? _____
- How many bags were collected on Monday? _____
- Altogether, how many bags were collected this week? _____

Explain how you figured this out _____

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TASK #6: GROWING OUR OWN FOOD

You decide to plant a garden this summer. You'll plant carrots, peas, potatoes, peppers, and tomatoes. Use the circle graph to figure out the amount of time that you spend preparing and planting your garden. Then use the picture graph to figure out the number of seeds you planted.

Skills: circle graphs, estimation, picture graphs

TASK #6 GROWING OUR OWN FOOD
Growing your own food is a fun way to help our Earth, and feed your family at the same time!

You decide to plant a garden this summer. You'll plant carrots, peas, potatoes, peppers, and tomatoes. This circle graph shows the amount of time that you spend preparing and planting your garden.

prepare the soil
 buy the seeds
 plant the seeds
 water the garden

Altogether, you spent 3 hours doing all of the tasks shown on the graph.

- ABOUT how long did it take you to prepare the soil? Make an estimate. _____
- Which task took longer - buying the seeds or watering the garden? _____
- ABOUT how long did it take you to water the garden? Make an estimate. _____

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You decide to use a picture graph to show how many seeds you plant.

Plant	How many were planted? (Each picture represents 3 seeds.)
Carrots	
Peas	
Potatoes	
Peppers	
Tomatoes	

Use the picture graph to answer the questions:

- How many potatoes were planted? _____
- How many carrots and peppers were planted? _____
- How many more potatoes than peppers were planted? _____
- You had planned on planting 25 pea seeds, but you didn't quite have enough. How many were you short? _____
- If every tomato seed that you plant will give you 2 tomatoes, how many tomatoes will you have? Draw a picture to figure it out.

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TASK #7: SAVING RAIN WATER

To water your garden throughout the summer, you'll be collecting rain water in barrels so that you don't have to use tap water. Add the data to the bar graph.

Skills: bar graphs

TASK #7 SAVING RAIN WATER
To water your garden throughout the summer, you'll be collecting rain water in barrels so that you don't have to use tap water.

This week was a very rainy week! The graph below shows how much it rained on Sunday and Monday. Complete the graph to show how much it rained during the rest of the week.

Tuesday - It did not rain.
 Wednesday - It rained 4 cm.
 Thursday - It rained 6 cm.
 Friday - It did not rain.
 Saturday - It rained 2 cm.

AMOUNT OF RAINFALL THIS WEEK

SUNDAY MONDAY TUESDAY WEDNESDAY THURSDAY FRIDAY SATURDAY

week, how much did it rain? _____

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TASK #8: BIKING VS. DRIVING

You know that when you walk or bike instead of drive, it is better for the environment. You decide to survey the other kids at your school to see how many of them bike or walk to school instead of driving.

Skills: tally charts

TASK #8 BIKING VERSUS DRIVING
You know that when you walk or bike instead of drive, it is better for the environment. You decide to survey the other kids at your school to see how many of them bike or walk to school instead of driving.

QUESTION: Did you bike, walk, or drive to school today?

RESULTS:

Mode of Transportation	Number of people	Write the number.
Bike		
Walk		
Drive		

Answer the questions:

- What was the most popular mode of transportation today? _____
- What was the least popular mode of transportation today? _____
- What is the difference between the number of people who walked and the number of people who drove to school today? _____
- Altogether, how many people were surveyed? _____
- How could you encourage more people to walk or bike instead of driving? _____

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The next day, you decide to run a challenge! You'll challenge as many people as possible to bike or walk to school instead of driving.

You survey everyone again, and find the following results:
Bike - 30 Walk - 31 Drive - 6


Add the data to the tally chart.

Mode of Transportation	Number of people	Write the number.
Bike		
Walk		
Drive		

Answer the questions:

- Did the challenge work? How do you know? _____
- How many more people biked and walked on Day 2 than on Day 1? _____


PLUS TWO BONUS WRITING ACTIVITIES
to use at the beginning and end of the project

OUR EARTH 
Let's make a commitment this year to do more to help the Earth! First, let's take a look at some things that you already do.

AT HOME

AT SCHOOL

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MAKE A PLAN 
One person can make a big difference! On this page, write down all the ways you can think of to help the environment. Let's make it happen!

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ANSWER KEYS ARE INCLUDED TO MAKE SELF-CHECKING SIMPLE.

WAYS TO USE MATH PROJECTS IN YOUR CLASSROOM:

Math projects are an ideal way to consolidate learning. I recommend using them as an engaging activity AFTER skills have been learned rather than during learning. You will likely find that engagement is very high and that your students ask to do more of these!

There are many ways to use math projects in your classroom. Some of the most popular are:

- a small-group or pairs activity
- a guided math activity to allow you to see where your students are struggling
- a fun, rewarding way to engage your early finishers
- a low-prep, easy-to-implement activity for a substitute teacher

Enjoy!

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