



AFTERSCHOOL EXCHANGE ACTIVITY

MONSTROUS DATA

PREPARATION

Grade Levels: 1 – 3

Prerequisite: Group leaders will need to have access to the Video on Demand service, available to New York state educators at <http://www.thirteen.org/edonline/itv>. If you do not live in New York state, get a password by calling 1-800-323-9084. The group leader will need to be familiar with the video in order to know when to start and stop with respect to the components of the activity. In advance, prepare a sheet with questions (Step 1) and ample room to fill in the answers during the lesson (Step 2). Prepare a worksheet with the questions if working with older children. Also, prepare on large poster paper the bar graph that the monsters make to illustrate to students.

Materials:

Students will need:

- Notebook or paper and a clipboard
- Pencils, crayons
- Graph paper for older students

Group leader will need:

- Large pieces of poster paper and markers or blackboard and colored chalk
- Map
- TV and VCR with ITV recording of Math Monsters #1. Start with: Pancake Song (time 1:14), and continue: Collecting Data (2:54), Looking at Data (3:08), Putting it Together (3:15).

Academic Goals:

- Students will learn the meaning of data and data collection
- Students will learn various ways of representing data
- Students will learn how to make a bar graph

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Social Goals:

- Students will develop interpersonal skills by collecting their own data
- Students will collaborate on making a bar graph

Introductory Activity (10 minutes):

- Divide children into pairs. Have them ask one another what their favorite color is. On one large piece of paper, have each of them draw a circle with their partner's favorite color with the child's name inside of it. Write the various colors on the paper/blackboard and the amount each received. Ask children which is the most popular color? The least? By how many? (subtraction) Point out that this is one way to collect information and represent it. Tell them they will learn more about this topic while watching a video about Math Monsters.

Learning Activities (45 minutes):

1. Tell students they will need to pay attention and listen to the video so they can answer the following questions. Go over the questions, which are posted on paper. For older children you can give them each a copy of the questions to answer individually after the first segment.

- What symbols are the Monsters?
- What kinds of pancakes do they like?
- What is the Monsters' problem?
- How can the monsters figure out what kind of pancake monsters like most?

2. Start the video with the Pancake Song. Stop the video when you see the question mark and a monster asks how they can figure out what pancakes monsters like most. Go through the questions, soliciting children's answers (or give the older children time to answer the questions on their sheet and then go over the questions as a group). Write the answers on the poster paper.

- The Monsters are different mathematical signs: addition, subtraction, multiplication, and addition. In the video, each Monster has a name that is related to their sign. Tell them to listen and see if they can learn their names by the end of the video.
- Pancakes they like: banana, blueberry, watermelon, bubble gum, broccoli
- Problem: they only have three bowls for mixing batter so they can only serve three kinds of pancakes in their restaurant
- Write down children's predictions and tell them to listen to see what the Monsters do

3. Continue with the video about data collection. Stop the video at the end of the song about asking monsters for information. Write the word Data on the board and ask for the definition. Ask the children to answer the last question: the monsters can ask people to find out the information they need.

4. Tell students to now pay attention to the different ways the monsters collect and represent the information. Older children can be asked to write this down at the end of the segment. Play video and stop it when the monsters ask how they could organize the data and you see floating question marks on the screen.

5. Ask the children what are the different ways the monsters collected and recorded their data. Write the answers on the board (by color, pictures, making a list with monster's name and favorite pancake, making a list of pancakes and a check mark). Older children can report out their answers, which are then written on paper.
6. Ask students how the monsters can figure out how to organize the data. Continue with the video on organizing the data by making a bar graph. When monsters have finished making the bar graph and put numbers on it, stop video and review the graph and number of pancakes in each bar (post the graph on poster paper as it appears on the video). Ask what is the most popular pancake? The least? By how many pancakes?
7. Tell students next it is their turn to collect data. [Time permitting, they can continue the activity or begin with this section the next day] Brainstorm with children their favorite foods. Write a list on the board of various foods. Tell them their job is to find out what are the favorite foods of other people in the program/organization. Depending on age/ability, children will collect data using one or a variety of the ways the monsters used (refer to the list). Also, decide on how many people (other children, adults) each child will ask and specify before going out to ask.
8. Give each child a notebook or paper and clipboard and appropriate materials (e.g. pencil, crayons if representing by color, picture). Go with them as they collect data and return to the room.
9. Students return with information. Have them take turns reporting the data collected and tally the information on the board. After all data is presented, make a bar graph on poster paper. Ask them to give the bar graph a title. Older students can each make their own graph with the reported information on graph paper.
10. Time permitting and depending on age/ability, have children do math problems with the results of the data collection (e.g. What is the most popular food? By how much? How many people like one food versus another?)

Follow up (10 minutes):

Put the information on a spreadsheet and show children another way to represent data. Also, you can discuss other kinds of information they want to know about and how they could collect and represent the data.

Extension:

As the video mentions that the monsters go to collect data in all four corners: north, south, east, and west, you can take the opportunity to also review the directions with the children. Write N/S/E/W on the board and ask students to define what each stands for. Ask for volunteers to come up and point out examples on the map to illustrate the directions (e.g. with respect to continents as North America and South America, New York is in the east of the U.S., California is in the west).

CREDITS

This AFTERSCHOOL EXCHANGE activity was developed by Julie Spiegel Ph.D., Educational Specialist at The Point CDC, based on the Thirteen/Ed Online Video on Demand (VOD) program "Math Monsters #1." To access Thirteen's Video on Demand service and download this video, visit <http://www.thirteen.org/edonline/itv/>. (Note: If you are not a New York state educator, you must first call 1-800-323-9084.)