10-B
5

Getting Ready

OBJECTIVE: Student will interpret a line graph to describe change over time using the overall shape.

Materials

Warm Up

- Vocabulary card (same)
- 6 cubes
- plastic bags
- poster (GO-Chart Grid)
- Numeral cards
- paper tiles

Explore

- poster (In the Garden)
- water bottle
- baby pictures
- plant

Warm Up

A. VOCABULARY REVIEW: *same*

Show/give Concrete Connection: Place three cubes in each of two bags. Fasten together.
Label "*same*."
Show "*same"* Vocabulary card.
Say "**Read** it."
Students **locate** and **show** examples of *"same"* using pictures from home, school, or books.

B. FUN & GAMES: Coordinate Your Coordinates

PREPARATION
Display GO-Chart Grid. Label y-axis and x-axis 1-10 on Grid. Write "0" at lower left corner. Fasten Numeral cards 1-10 on All-Turn-It spinner. Split group into teams. Teams **choose** color of paper tiles.

DIRECTIONS
Player **spins** twice for coordinates. Team members help **locate** and **mark** coordinate. First number spun is x coordinate and must be located along x axis first. Play continues. First team to plot 3 coordinates in a row on either axis wins.

Explore

A. POSTER: In the Garden

Point out which things that change over time in a garden on the poster, including growth and number, color or size of vegetables on a plant.
Discuss what you see on the poster and personal experiences; use information from home.

B. TOOLS & MANIPULATIVES

Say "Let's explore things that change.
Drink from a water bottle. Show how the amount changes each time you drink.
Look at plants and talk about growth. **Discuss** how much students have grown since they were babies.
Students **hold** and **explore** baby pictures and compare sizes.

10-B

Lesson 5

OBJECTIVE
Student will interpret a line graph to describe change over time using the overall shape.

Materials

Introduce

- poster (In the Garden)
- Vocabulary card (increase, decrease)
- 10 cubes
- blocks
- 2 plastic bags

Teach

- poster (GO-Chart Grid)
- attribute blocks (small)
- data pic-symbols (12-carrot, 8-pretzel)
- workmat 4

Introduce and Connect

A. EXPLORE POSTER: In the Garden

Show/give student(s) Concrete Connections: Place 8 cubes in a bag. Label "*increase*." Place two cubes in second bag. Label "*decrease*."
Talk about number of tomatoes *increasing* on a plant. Ask "When does the number of tomatoes *decrease*?" Direct students to **point** to tomatoes on plant.

B. SHOW & TELL

Ask, "What do you know about change, *increasing* and *decreasing*? Students **tell** what they **see** on the poster and what they know. Write student comments on Number Notes poster with numbers, math symbols, words, pic-symbols, and objects. Use students' past work or items from home when possible. *Note: Objects or pictures can be fastened to the Number Notes poster.*

C. VOCABULARY: i*ncrease, decrease*

Show "*increase"* Vocabulary card
Say "This says *increase* . **Read** it."
Students **say** *increase* 3 times.
Increase means the amount becomes more.
Repeat for "*decrease*."
Decrease means the amount becomes less.

P GO-Chart Grid

Sensing Math

Use clear measuring cup to **explore** the water level going up when *increasing* and down when *decreasing*. Repeat with a variety of liquids or solid amounts. Use pleasant smelling liquids to add interest, such as cherry juice or soda pop.

Level Guide 1 Level = Severe 2 Level = Moderate 3 Level = Mild

Teach

A. VISIBLE THINKING

Use GO-Chart Grid, attribute blocks (small), and pic-symbols to show what you are thinking. Show data of pretzels placed on plate and eaten over 3 days. *Demonstrate each CSA level twice.*

C Fasten shapes to GO-Chart in bar graph in same-color/shape columns of 0, 6, 1, 1. Label x-axis Day 1- 4 and y-axis Pretzels 1-8. Point to Day 1: Say, "0 pretzels", Day 2: "I put 6 pretzels on plate," Days 3 and 4: "Pretzels were eaten." Show graph *increasing*, *decreasing*, then staying the same.

S Remove shapes and replace with pretzel pic-symbols in each column. Show *increase*, *decrease* and same amount on the graph over four days' time.

A Mark top of each column with a dot on nearest lines. Remove the pic-symbols and connect the dots in a line graph. Show *increase*, *decrease* and same amounts.

B. TRY IT: Skill Drill Worksheet

Students **look** at graph and describe trend of line *increase*, *decrease*, or same.

Problem Solving

A. DEMO: GO-Chart Grid, Workmat 4

Vic wanted to keep track of number of tomatoes that grew. He took data. In four weeks there were 3, 5, 2, and 2 tomatoes. Find the *increase*, *decrease*, and same number of tomatoes using a graph. Use GO-Chart Grid.

B. SOLVE IT

In four weeks Aida pulled 2, 5, 5, and 0 carrots from her garden. Which place on graph shows *increase* and *decrease* in carrots? Which shows same? Label x-axis Week 1-4, and y-axis Carrots 1-5. Plot dots on workmat and connect them.

1 Level Place *increase*, *increase*, same in pocket chart. Fasten cubes to grid from bottom to point for first 2 weeks. Show week 1 to week 2. Ask, "Did the carrots *increase*, *decrease,* or stay the same?" Student **records**.

2 Level Show line from week 1 to week 2. Ask "Did the carrots *increase*, *decrease* or stay the same?" Student **records**. Repeat for the other weeks. Option: Add carrot pic-symbols to show changes (place on x-axis up to point).

3 Level Say "**Point** to the weeks that show an *increase* in carrots." Student **records**. Repeat for *decrease* and same.

C. TRY MORE: Problem Solving Worksheet

Students **identify** *increase*, *decrease*, and same amounts on graph by answering questions.

Close

A. SHOW ME, SHOW OTHERS: I Learned...

Review what students have learned. Ask students to demonstrate skill, share their worksheets or read their Number Notes. It is essential that students have a meaningful way to communicate what they have learned.

B. NUMBER NOTES

Model writing vocabulary "*increase, decrease"* and on Teacher Number Notes. Students **write** "*increase, decrease*" in Number Notes using numbers, math symbols, words, pic-symbols, or objects, and describe what they have learned. Option: Place math pics on Number Notes page and circle or stamp the pic-symbols that represent what you have learned.

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Follow Up

OBJECTIVE: Student will interpret a line graph to describe change over time using the overall shape.

Real Life Problem Solving

CLASSROOM: Students **weigh** or **measure** amount of recyclables over three days and decide if the amount *increased, decreased,* or stayed the same. Place GO-Chart Grid on bulletin board and label x and y axis. Graph the amount of recyclables over a week. Discuss increase, decrease, or same amounts.

CALENDAR: **Discuss** with students *increase, decrease,* or same temperature from previous day. Look at last month's and current months days off. Ask students if number of days off have increased, decreased, or stayed the same.

COMMON: When walking through the halls students **talk** about the *increase, decrease,* or same amount of students in the halls as they go to their classes or lunch. Students visit the nurse and **ask** if the number of absent students has increased, decreased, or stayed the same over last week. Students **ask** what variables will change the amount.

Workstations

MATERIALS / PREPARATION

Show three plant graphs of a tomato, cucumber, and bean plant growing over four months. Fasten tomato, cucumber, and bean pic-symbols on cubes. Record on Step-by-Step for level 1: "Find a plant that increased."

1 Level Students **activate** Step-by-Step directions. Students **match** plant pic-symbol cube to the graphs that show an *increase*.

2 Level Students **place** pic-symbols on chart to describe three plant graphs that demonstrate an *increase*, *decrease,* or same growth over four weeks.

3 Level Students **describe** six plant graphs on chart and describe type of plant, general *increase, decrease,* or same growth. Challenge: Students **choose** possible variables that may have changed the outcome.

Games

A. VOCABULARY: Spinning for *Increase* and *Decrease*

MATERIALS / PREPARATION

Place pic-symbols (*increase, decrease*, foil) on All-Turn-It spinner. Place a cube on each game board space. Give each student a pawn.

GAME DIRECTIONS

Player **spins** All-Turn-It spinner. If player spins "*increase" or "decrease"* he/she **moves** the pawn to the next space. If player spins a foil, he/she loses a turn. Player to reach end of the board first wins.

B. SKILL: Who Took the Cookie?

MATERIALS / PREPARATION

Place attribute blocks and bowl on table. Display GO-Chart Grid with x-axis labeled Turns 1-9, and y axis labeled Cookies 1-10. Write on sticky notes: - 1, - 2, +1, +2, = (same). Fasten on All-Turn-It spinner. Place 2 cookies (shapes) in the bowl and plot amount on graph. Split into teams and assign a team marker color.

GAME DIRECTIONS

Player **spins** and **places** or **removes** number of cookies indicated . Number of cookies in bowl is plotted on graph with the team color. Continue play. Before spinning, team must state if line increased, decreased or stayed the same from the previous turn. After eight turns, the team color with highest amount plotted on graph wins.