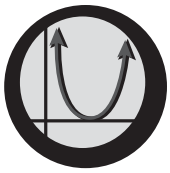
TABLE OF CONTENTS

Cooperative Learning and Pre-Algebra: Becky Bride
Kagan Publishing • 1 (800) 933-2667 • www.KaganOnline.com

TABLE OF CONTENTS CONT...

Chapter 5
RATIO, PROPORTION, AND PERCENT



Chapter 6
COORDINATE PLANES

Chapter 7
DATA ANALYSIS AND PROBABILITY

Cooperative Learning and Pre-Algebra: Becky Bride
Kagan Publishing • 1 (800) 933-2667 • www.KaganOnline.com

ACTIVITY 1

SOLVE MY EQUATION

Structure: Sage-N-Scribe

Solve each equation showing all work.

1. $-4 + y = 15$

2. $-5j = (-30)$

3. $\frac{c}{8} = (-4)$

4. $18 = m - 3$

5. $h - (-5) = 16$

6. $-21 = p + 7$

7. $42 = (-2x)$

8. $\frac{d}{-5} = 4$

9. $-8 + k = (-17)$

10. $w - (-3) = (-8)$

Answers:

1. 19	2. 6	3. –32	4. 21	5. 11
6. –28	7. –21	8. –20	9. –9	10. –11

Cooperative Learning and Pre-Algebra: Becky Bride
Kagan Publishing • 1 (800) 933-2667 • www.KaganOnline.com

LESSON 2: STATISTICAL GRAPHS

In this lesson, the students will construct several different types of graphs to organize data. Histograms, box plots, scatter plots, and stem leaf plots are the graphs students will construct. Students will take a stem leaf plot and extract the data and then analyze the data with skills they learned in Lesson 1. Students will interpret a circle graph in Activity 6. The lesson ends with an activity where the students will synthesize what they have learned.

ACTIVITY 1

DRAW A HISTOGRAM

Structure
- RallyCoach

Materials
- Blackline 7.2.1 per pair of students
- Transparency 7.2.1a
- 1 sheet of paper and pencil per pair of students

Graphic

1. Teacher poses many problems using Blackline 7.2.1.

2. Partner A draws a histogram for problem one on the paper.

3. Partner B watches, listens, checks, and praises.

4. Partner B draws a histogram for the next problem on the paper.

5. Partner A watches, listens, checks, and praises.

6. Repeat for remaining problems starting at step 2.

ACTIVITY 2

MAKE A BOX PLOT

Structure
- RallyCoach

Materials
- Blackline 7.2.2 per pair of students
- Transparency 7.2.2a
- 1 sheet of paper and pencil per pair of students

Graphic

1. Teacher poses many problems using Blackline 7.2.2.

2. Partner A draws a box plot for problem one on the paper.

3. Partner B watches, listens, checks, and praises.

4. Partner B draws a box plot for the next problem on the paper.

5. Partner A watches, listens, checks, and praises.

6. Repeat for remaining problems starting at step 2.

Cooperative Learning and Pre-Algebra: Becky Bride
Kagan Publishing • 1 (800) 933-2667 • www.KaganOnline.com

ACTIVITY

3 GRAPH A SCATTER PLOT

Graphic

1. Teacher poses many problems using Blackline 7.2.3.

2. Partner A draws a scatter plot for problem one, writing his/her response on the graph paper.

3. Partner B watches, listens, checks, and praises.

4. Partner B draws a scatter plot for the next problem, writing his/her response on the graph paper.

5. Partner A watches, listens, checks, and praises.

6. Repeat for remaining problems starting at step 2.

Structure
- RallyCoach

Materials
- Blackline 7.2.3 per pair of students
- Transparency 7.2.3a
- 1 sheet of graph paper and pencil per pair of students

ACTIVITY

4 CONSTRUCT A STEM LEAF PLOT

Graphic

1. Teacher poses many problems using Blackline 7.2.4.

2. Partner A constructs a stem leaf plot for problem one, writing his/her response on the paper.

3. Partner B watches, listens, checks, and praises.

4. Partner B constructs a stem leaf plot for the next problem, writing his/her response on the paper.

5. Partner A watches, listens, checks, and praises.

6. Repeat for remaining problems starting at step 2.

Structure
- RallyCoach

Materials
- Blackline 7.2.4 per pair of students
- Transparency 7.2.4a
- 1 sheet of paper and pencil per pair of students

ACTIVITY

5 INTERPRET MY STEM LEAF PLOT

Graphic

Setup:
In pairs, Student A is the Sage; Student B is the Scribe. Students fold a sheet of paper in half and each writes his/her name on one half.

1. The Sage gives the Scribe step-by-step instructions on how to do problem one.

2. The Scribe records the Sage's solution step-by-step in writing on the Sage's side of the paper.

3. If the Sage is correct, the Scribe praises the Sage. Otherwise, the Scribe coaches, then praises.

4. Students switch roles for the next problem.

Structure
- Sage-N-Scribe

Materials
- Blackline 7.2.5 per pair of students
- 1 sheet of paper and pencil per pair of students

ACTIVITY

6 INTERPRET MY CIRCLE GRAPH

Structure:
- Sage-N-Scribe

Materials
- Blackline 7.2.6 per pair of students
- 1 sheet of paper and pencil per pair of students

Numeric

Setup:
In pairs, Student A is the Sage; Student B is the Scribe. Students fold a sheet of paper in half and each writes his/her name on one half.

1. The Sage gives the Scribe step-by-step instructions on how to do problem one.

2. The Scribe records the Sage's solution step-by-step in writing on the Sage's side of the paper.

3. If the Sage is correct, the Scribe praises the Sage. Otherwise, the Scribe coaches, then praises.

4. Students switch roles for the next problem.

ACTIVITY

7 WHAT DID WE LEARN?

Structure
- RoundTable Consensus

Material
- 1 large sheet of paper per team
- 1 different colored pen or pencil for each student in the team

Synthesis

1. Each teammate signs his/her name in the upper right corner of the team paper with the colored pen/pencil he/she is using.

2. One teammate writes "*Graphs*" in the center of the team paper in a rectangle.

3. Teammate 1 shares with the team one core concept he/she learned in the unit.

4. The student checks for consensus.

5. The teammates show agreement or lack of agreement with thumbs up or down.

6. If there is agreement, the students celebrate and the teammate records the core concept on the graphic organizer, connecting it with a line to the main idea, *Graphs*. If not, teammates discuss the response until there is agreement and then they celebrate.

7. Play continues with the next student's core concept, until all core concepts are exhausted.

8. Repeat steps 3–7 with teammates adding details to each core concept and making bridges between related ideas.

Cooperative Learning and Pre-Algebra: Becky Bride
Kagan Publishing • 1 (800) 933-2667 • www.KaganOnline.com

ACTIVITY 3

GRAPH A SCATTER PLOT

Structure: RallyCoach

Make a scatter plot for each problem.

1.
Studying vs. Grade on Test

Hours Studied	0.1	0.4	0.8	1	1.2	1.5	1.8	2
Grade on Test	50	68	72	85	84	96	95	98

2.
Yearly Income

Years of School	6	8	10	12	14	16	18	20
Yearly Income (thousands)	15	16	18	24	30	38	55	120

3.
Gallons of Gas in Gas Tank

Number of Miles Driven	55	90	105	155	190	210	260	300	320	350
Gallons of Gas in Tank	16.4	15.1	14.6	13.2	12.1	11.4	8.9	7.5	6.8	5.9

4.
Bunny Population

Months	2	4	10	16	20	24	30
Bunny Population	2	10	36	64	105	144	200

ACTIVITY 5

INTERPRET MY STEM LEAF PLOT

Structure: Sage-N-Scribe

For problems 8–14, use the graph below. The graph represents the price of cars at a local dealership, in the thousands.

Stem	Leaves
1	2, 4, 5, 5, 5, 8
2	0, 1, 3, 3, 4, 7, 9, 9, 9, 9
3	0, 1, 2, 5, 5, 8, 8, 9
4	2, 5, 6, 6, 7
5	8

8. Write the data as a list.

9. Find the mean. Round to the nearest thousand.

10. Find the median.

11. Find the mode.

12. Find the range.

13. Which is the best measure of central tendency? Explain.

14. What percent of cars are between $25,000 and $36,000? Round to the nearest tenth of a percent.

Answers:

1. 6, 7, 7, 9, 12, 14, 18, 18, 18, 21, 24, 24, 29, 33, 35, 35, 37, 38, 39, 44, 48, 49 52, 54, 65
2. 29.44
3. 29
4. 18
5. 59
6. mean or median because they are so close and there are not any really small or large numbers
7. 24%
8. 12, 14, 15, 15, 15, 18, 20, 21, 23, 23, 24, 27, 29, 29, 29, 29, 30, 31, 32, 35, 35, 38, 38, 39, 42, 45, 46, 46, 47, 58
9. 30,000
10. 29,000
11. 29,000
12. 46,000
13. median or mode because a little more than half the data is 29,000 or below
14. 33.3%