Activity 1

Record the attendance for each playoff game on the graph.

<table>
<thead>
<tr>
<th>Date</th>
<th>Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 7</td>
<td>48,600</td>
</tr>
<tr>
<td>August 11</td>
<td>48,000</td>
</tr>
<tr>
<td>August 12</td>
<td>40,000</td>
</tr>
<tr>
<td>August 13</td>
<td>45,000</td>
</tr>
<tr>
<td>August 14</td>
<td>45,000</td>
</tr>
</tbody>
</table>

Weekly Math Practice

1. 75 \times 4 = 300

2. 75 \div 8 = 9.375

3. Ben is responsible for mowing 50% of the lawn. What does that mean?

4. If a = 20, what is the value of a + 40?

5. Mario eats two cups of cereal every night while he watches television. How many cups of cereal does he eat in one week?

6. If there are 13 pretzels in each cup, how many pretzels does Mario eat in one week?
Keeping Tabs on the Total

When you go grocery shopping, involve your child by having him or her do mental math to keep a running total of the shopping bill as you go.

What You Need

• shopping list

Shopping List

- bread
- milk
- coffee
- yogurt
- tomatoes
- bananas
- chicken
- eggs

How Long It Will Take

approximately 30 to 60 minutes
What You Do Together

1. Take your child grocery shopping for a few items. Explain to your child that he or she will help keep track of how much you are spending by rounding the amount of each item and keeping a running total. This is mental math, so don’t write anything down.

2. When you select the first item, have your child note the price and round it to the nearest dollar. For instance, an item costing $3.69 could be rounded to $4.

3. When you select the second item, your child will round the price, add it to the first number, and remember the new total.

4. Continue selecting items, rounding the prices, and adding them to the previous total.

5. After you have paid for your groceries, compare the pre-tax subtotal with your child’s rounded total. See how close he or she was to the actual cost.

6. Once your child becomes comfortable with the process, you can each do your own rounding and totaling and see whose total is closest to the actual subtotal.
Quilt Design

You and your child will analyze a star quilt block pattern, make a puzzle out of it, and then create a pattern of your own.

What You Need

- design grids (provided)
- ruler
- colored markers or crayons
- scissors

How Long It Will Take

approximately 60 to 90 minutes
What You Do Together

1. Explain that quilts were made hundreds of years ago from scraps that were left over after making new clothing or by cutting up old, worn-out clothes. Quilters put the scraps to good use by arranging them into designs and sewing them together to make warm, attractive bed coverings. The star pattern was a popular type of design.

2. Working together, analyze the star pattern on the first page and copy it onto the first design grid on the next page. Start in the upper left corner. Use the ruler as needed to help visualize what is in each row or column.

3. Help your child count how many triangles and squares are in the completed quilt square. Count not only the small squares and triangles but also bigger ones made by a group of smaller ones. For example, the four small squares in each corner make a bigger square.

4. Have your child cut out the completed quilt square. Then have him or her cut the pattern into 8 rows.

5. Challenge your child to put the pattern back together. Help him or her use symmetry as a clue to arranging the pieces.

6. Working together, experiment with other ways the rows could be arranged to make different symmetrical patterns.

7. Use the second grid to color your own star quilt pattern.
Plot the Dots

This activity is a much more challenging version of connect-the-dot drawings because you must first plot the dots! You and your child plot ordered pairs on graph paper and connect them in the same order to reveal a picture. Then your child creates a plot-the-dots picture for you to solve.

What You Need

- several copies of graph paper with a coordinate grid (provided)
- blank sheet of plain paper
- pencil with an eraser
- crayons, paints, markers, or colored pencils (optional)

How Long It Will Take

approximately 45 to 60 minutes
What You Do Together

1. Work with your child to plot the following ordered pairs on a sheet of coordinate grid graph paper. To plot the ordered pairs, look for the first number of each pair along the bottom of the grid and the second number on the left side of the grid—the dot goes where those two grid lines meet. As your child draws each dot, he or she should connect it to the previous dot. Start a new piece of the picture with each new group of ordered pairs.

   (2, 8) (3, 11) (4, 14) (6, 16) (8, 18) (11, 20) (13, 21) (13, 6) (2, 8)
   (14, 6) (27, 7) (24, 9) (23, 10) (21, 13) (20, 14) (19, 16) (18, 18)
   (17, 20) (16, 22) (15, 25) (14, 27) (14, 6)
   (1, 8) (5, 2) (25, 2) (27, 6) (7, 6) (3, 7) (1, 8)

2. On another sheet of coordinate grid graph paper, have your child draw his or her own picture. Don’t peek!

3. Have your child draw dots on the completed picture where the lines cross a grid point or come close to one. Have him or her write the ordered pair next to each dot.

4. Then have your child copy onto a blank sheet of paper the ordered pairs, in order, that make each part of the drawing. Each parts’ ordered pairs start on a separate line as shown above.

5. Now it’s your turn to plot and connect the dots on a sheet of coordinate grid graph paper and reveal the mystery picture.

6. As a bonus, ask your child to estimate the area of each figure. Then he or she can color each picture with crayons, paints, markers, or colored pencils.
Grid
Make a Sundial

Sundials are a blend of geography, science, and math. They told the time long before we had clocks and watches, and they don't require electricity or batteries to work—only the sun! In this project, you and your child will make and learn to use a sundial.

What You Need

- Internet access
- sheet of foam board or thick cardboard, approximately 11" x 14"
- sheet of foam board or thick cardboard, approximately 11" x 8"
- protractor
- pencil
- permanent marker
- ruler
- scissors or craft knife
- tape or glue

How Long It Will Take

about 2 days
What You Do Together

1. Help your child figure out the latitude of your city. Check an atlas or do an Internet search. In the Search box, enter “find latitude” and the name of your city.

2. Help your child find the sundial’s hour-line angles for your city. On the Internet, enter “sundial hour-line calculator.” On the website, enter your latitude. Round each angle to the nearest whole angle. Write down the five angles and their hours for use in Step 4.

3. On the larger board, draw a line down the middle from top to bottom. Label the line “12 noon.” Write “6 AM” in the lower left corner and “6 PM” in the lower right corner.

4. Working together, use a protractor and the angles from Step 2 to mark the angles for 7 AM through 5 PM on the board. Draw lines from the middle point on the bottom edge through each mark. Label each line with the hour.

5. Help your child make the part of a sundial that casts a shadow, called the gnomon [NO-muhn]. Turn the smaller board so it is horizontal. Using the protractor, draw a triangle with an angle that matches your latitude. Write “latitude” on that angle. Cut out the triangle.

6. To assemble the sundial, place the gnomon perpendicular to the board on the 12 noon line with the latitude angle touching the bottom edge. Tape or glue the gnomon in place so it stands straight up.

7. Help your child find a flat place outside in the sun to put your sundial. The sundial’s gnomon should face true north. To find true north, go out at true midday and turn the sundial until the gnomon is not making a shadow on either side. The sundial is now ready to use! Note that the sundial will show the time in standard time. During daylight saving time, you’ll have to subtract an hour from the time shown on the sundial.
Apple Market Research

Apples are a fun, tasty, useful fruit that come in many varieties. In this project, you and your child will conduct a taste test of different apple varieties and graph the results.

What You Need

• five different varieties of apples, two of each variety
• large sheet of paper or several taped together to be at least 17" x 11"
• tape
• stickers, one per taster
• an app that makes graphs, or graph paper and colored pencils or markers

How Long It Will Take

about 3 days
What You Do Together

1. Working together, help your child organize a taste test, inviting at least 12 people to be the tasters.

2. Help your child select 5 apple varieties that are available in your area. Buy at least two of each variety selected so that you will have one slice for each taster (one apple makes 6 slices).

3. On a large sheet of paper, have your child set up a pictograph with a column for each apple variety. Give each column a number from 1 to 5. Tape the pictograph on a wall where the tasters can reach it.

4. For the taste test, cut each apple into 6 slices. Put each different variety of apple on its own plate. Have your child number each plate from 1 to 5 with a sticky note and keep a separate list of which variety is on which plate.

5. Have your child give one sticker to each taster and explain the procedure:
   - The tasters may take one slice of each apple variety.
   - The tasters should keep track of the number of the apple they like best.
   - After tasting each variety, the tasters put their sticker on the pictograph above the plate number of the apple they liked best.

6. Work with your child to calculate the percent of votes each variety received (the number of votes the apple received divided by the number of tasters). Then create a pie graph showing the results of the pictograph. The pie graph can be decorated to look like an apple pie. Each slice of the pie is a different variety of apple.