

# POP Charts

## 3-D Graphs and Charts

### (art + math)

Graphs and charts are a great way to integrate math skills with art. They communicate information visually - the same purpose a drawing or painting might serve. This page offers a few suggestions for turning graphs and charts into creative artworks as a way to support mathematical instruction on chart and graph reading.

### Grade Levels 3-8

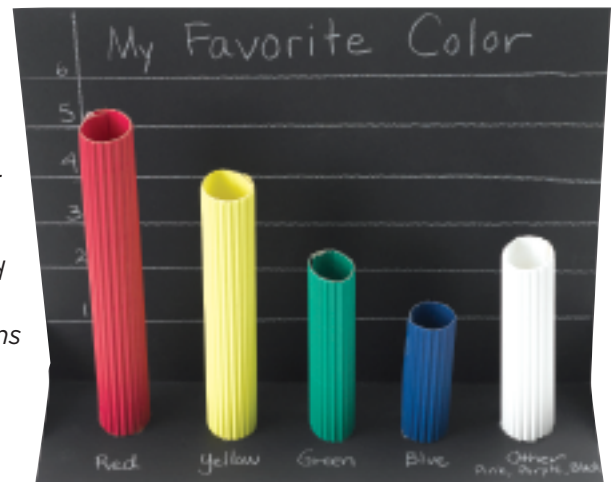
### Process

1. The first step is to determine what type of information will be displayed on the chart and collect the data needed. This can be done in the form of a quick, simple survey, (for example - what is your favorite color? How many of each color of candy is in one bag?) Or, the data can be collected over a period of time, as in weather or attendance charts. Write the collected data down.
2. Next, determine which type of chart will best display the information and will fit the skill level of the class. Bar graphs may be best for comparison data with young children, line graphs may be best to show data collected over a period of time. Students beginning to learn fractions or percentages may display their information in a pie chart.
3. Create a dimensional graph or chart using simple sculpture processes and collage. The following ideas are suggestions for incorporating different art materials into fun charts and should be used as a starting point on which to build creative ideas.



*This simple, fun bar graph uses natural Waffle Paper rolled into cone shapes and scrunched-up tissue paper glued in place for the ice cream. This could also be done as a classroom chart, with each child providing their own "scoop" on top the cones.*

*Bar graphs can be made with columns of colorful paper, as in this example. Fold a piece of Railroad Board into an L-shaped shelf and mark the data in front and on the background. Roll and tape (or staple) colorful corrugated paper columns and use scissors to trim the height. Glue in place on the shelf.*



## DIMENSIONAL BAR GRAPHS

Most bar graphs use a vertical line on the left side and a horizontal line across the bottom (x and y axis) to display data, but a little creativity can add "pop".

### Materials

**Railroad Board**, 11" x 14" (13105-0659), 6-ply, assorted colors, need one per student

**Folia Corrugated Sheets**, 9-3/4" x 13-3/4" (12231-1010), classic colors, need equivalent of one sheet per student

**Waffle Paper**, natural kraft (11212-8336), 36" x 8-ft roll, cut down to 12" x 12" pieces, need one per student

**Blick Art Tissue**, 12" x 18", 50 sheet package, need one sheet each color per student;

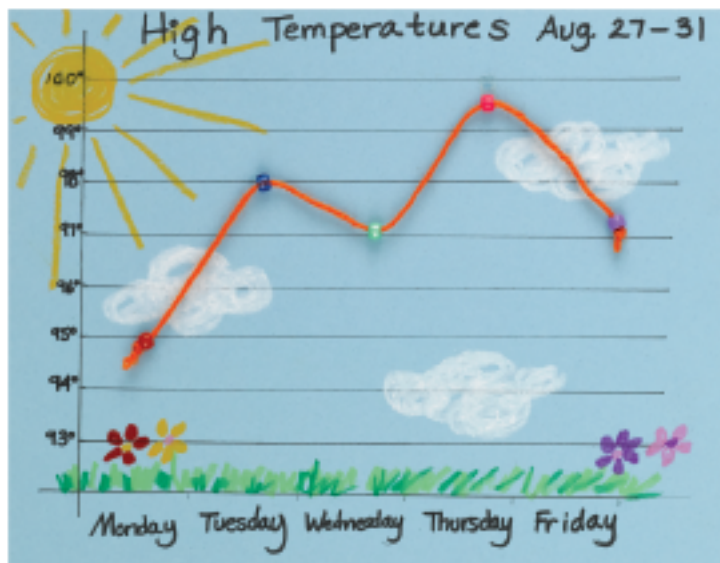
Brown (11308-8007), Vanilla (11308-1507), Yellow (11308-4007), Dark Pink (11308-3327), Apple Green (11308-7177)

**Blick Washable Glue** (23872-1044), 4-oz bottles, share between 2-3 students

**Blick Plastic Ruler**, 12" (55403-1012), one per student

## BEADED LINE GRAPH

Measure a vertical line on the left side and a horizontal line across the bottom (x and y axis) of a piece of Railroad Board. Label information on each line with a black marker. Decorate the background with construction paper crayons. Glue a pony bead in place for each data point, with the side of the bead against the paper. Allow the glue to dry, then string colorful yarn through the pony beads to connect and form a line graph. Tie a knot at each end of the yarn.



### Materials

**Railroad Board**, 11" x 14" (13105-0659), 6-ply, assorted colors, one per student

**Pony Beads**, (60772-1030), assorted colors, need 5-6 per student

**Blick Washable Glue** (23872-1044), 4-oz bottles, share between 2-3 students

**Blick Plastic Ruler, 12"** (44503-1012), need one per student

**Trait-Tex® Heavy Polyester Rug Yarn** (65224-), assorted colors, about 20" length per student

**Crayola® Construction Paper Crayons**, 16-color set (20117-0019), share between 2-3 students

**Blick Broadline Markers**, Black (21224-2001), need one per student

## CLAY PIE CHART

Have as many colors available as sections of the pie chart. Colors can be shared across the class, so there's no waste. Model Magic is a lightweight, clean modeling medium that air-dries quickly and comes in a variety of brilliant colors.

Roll a 2" ball and flatten it out, cut with a modeling tool into sections according to the data to be displayed. Pass the color on to the next person, so that each chart uses all colors. Glue sections onto Railroad Board, allowing space between the "pie" pieces and label with a marker. Model Magic does not need to be completely dry to glue or write on with a marker).



### Materials

**Crayola® Model Magic®**, assorted colors (33214-), need approximately 1-oz per student

**Railroad Board**, 11" x 14" (13105-0659), 6-ply, assorted colors

**Student Modeling Tools** (30361-1009), 7 tool set, share between 3-4 students

**Blick Washable Glue** (23872-1044), 4-oz bottles, share between 3-4 students

**Crayola® Classic Markers** (21218-1209), 8 color set, share between 3-4 students

**Crayola® Pencils for Colored Paper** (20587-0129), 12-color set, share between 3-4 students

## National Standards

Content Standard #2 — Using knowledge of structures and functions

- K-4** Students use visual structures and functions of art to communicate ideas
- 5-8** Students employ organizational structures and analyze what makes them effective or not effective in the communication of ideas

Content Standard #6 — Making connections between visual arts and other disciplines

- K-4** Students identify connections between the visual arts and other disciplines in the curriculum
- 5-8** Students describe ways in which the principles and subject matter of other disciplines taught in the school are interrelated with the visual arts