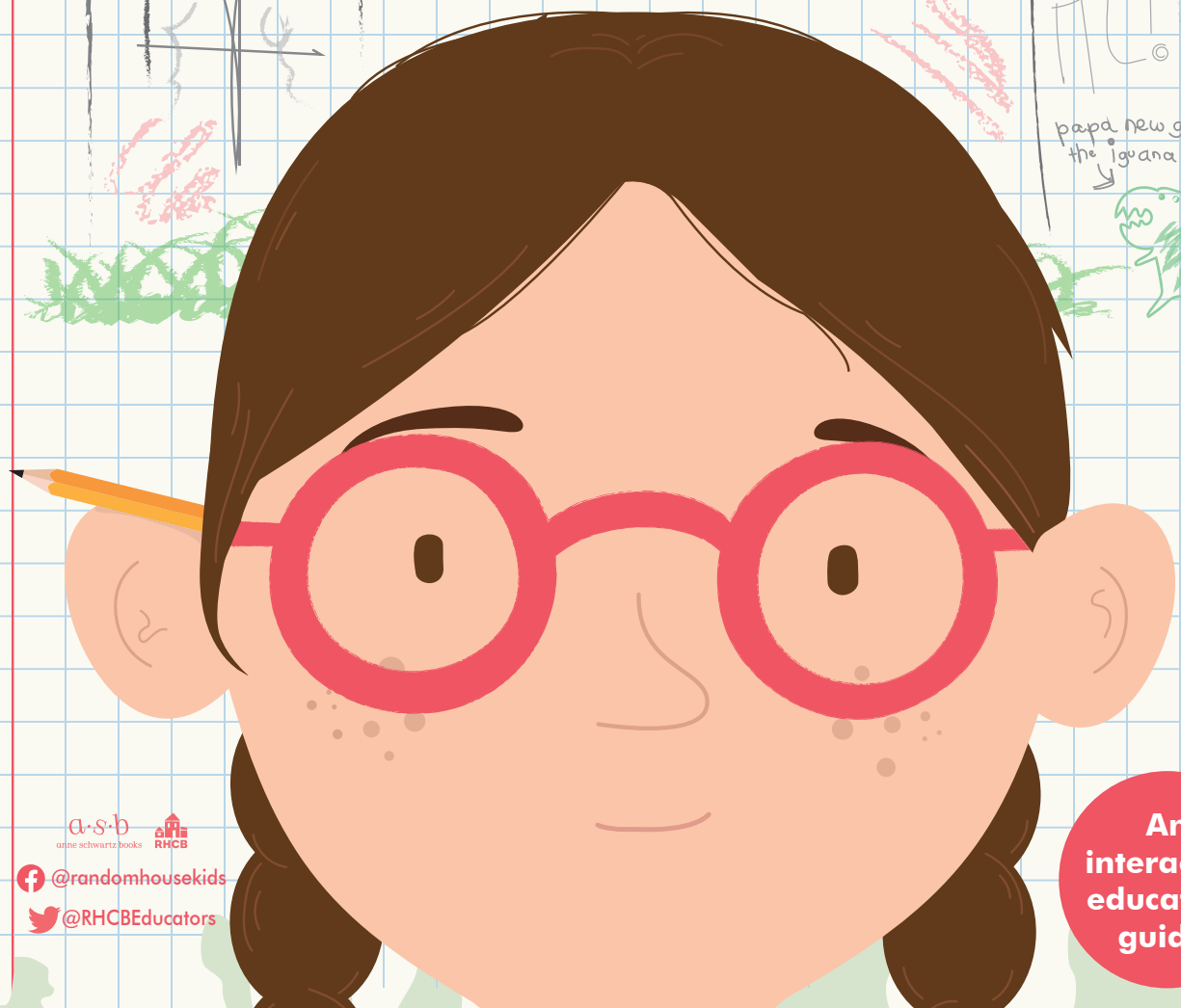


Uma Wimple Charts Her House

by Reif Larsen and Ben Gibson



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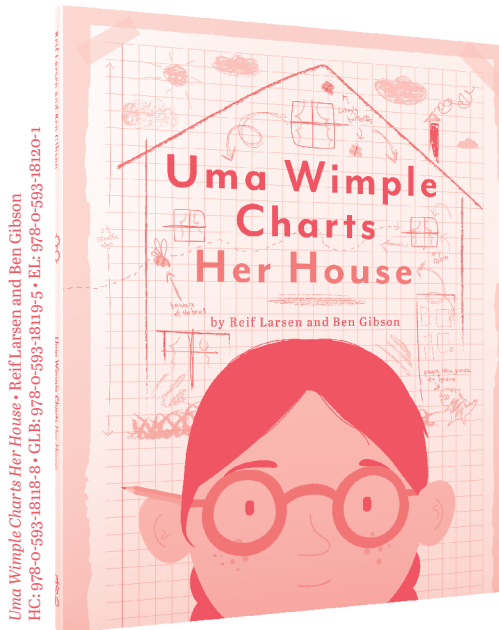


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An
interactive
educators'
guide!

Uma Wimple Charts Her House



About This Book

Uma's been making charts since she was a little kid. But when her teacher gives the class Uma's dream assignment—to make a chart of their own homes—she is thrown for a loop. Oh, the possibilities! Oh, the pressure! *What makes a house housey?* she wonders. In order to figure it out, she asks each member of her family—Mom, Dad, and brothers Rex, Bram, and Lukey. But it's not until she has a meltdown and Lukey comforts her that Uma figures out the secret to her chart—and her family. It's the love that is shared inside a house's walls. Filled with charts and graphs galore, *Uma Wimple Charts Her House* will inspire excitement for data and diagramming.

About the Creators

Reif Larsen

Reif Larsen is the author of two novels for adults, *The Selected Works of T. S. Spivet* (a *New York Times* bestseller) and *I Am Radar*. *The Selected Works* was also made into a movie—*The Young and Prodigious T. S. Spivet*, starring Kathy Bates and Helena Bonham Carter. He also writes articles on travel for the *New York Times*, *GQ*, and others. Reif received an MFA from Columbia University. Visit him at reiflarsen.com.

Click here
for a word
from the
author!

Ben Gibson

Ben Gibson, a former art director for Riverhead Books, is the cofounder and design director of Pop Chart Labs, a design collective that combines infographics and pop culture. His work for Pop Chart has been featured on *Today*, *DailyCandy*, and *BuzzFeed*, among others. Ben is a graduate of Parsons School of Design. Visit him at popchart.co.

About This Guide

This guide was written for educators to help students become familiar with charts, graphs and maps. Many of the activities in this guide are also easily adaptable for at-home learning.

To make the most of these activities, first read this book aloud to students. Pause to point out details about Uma and other characters or to explore an illustration. Then, watch Reif Larsen's [video](#) so that the students are excited to explore the wonderful world of diagramming. Read this book again, noticing the different types of charts that Uma uses. Don't forget to direct students to the back matter for reference!

This guide also offers discussion questions and creative activities that will give kids visual literacy practice and invite further exploration of the data they are collecting. Notice with students the insights that charts provide, as well as how charts can create change in the way we think about the world!

Tally Time!

A **tally chart** is a simple way to record data. This data can then be used to create more complex graphs or pictograms. A tally chart consists of a simple table and tally marks, which are grouped in sets of five. Tally charts are perfect when conducting surveys or taking votes. [BrainPOP Jr.](#) features a great introductory video on tally charts and shows students how to create tally marks.

In this activity, students will collect data using tally charts and graph their findings. Some potential topics include:

- What are the class's favorite school lunches?
- Which story is a class favorite?
- Let's vote on an imaginary class pet! What animal will it be?

The wonderful thing about charts is their limitless possibilities! After choosing a topic, create a list of four to six options and list them on the board in a table. You could also post each option on a separate sheet of poster paper and spread them throughout the classroom. Students should create their own tally chart on the accompanying reproducible.

Tip: Make sure students know the total number of students in the class prior to starting the activity.

Predictions

Prior to collecting data, have students make a prediction. What do they think might be most popular, and why? Compare students' predictions. Are there any trends? Encourage students to explain their predictions.

Collect the Data

Give each student a sticky note and have them come to the board or visit the poster paper, placing their sticky note on the option of their choice. There are also many digital polling options available, such as [Google Forms](#) or Slido.

Tally Charts

Using the reproducible enclosed, have students label the tally chart with each of the possible options and use hash marks to record the results.

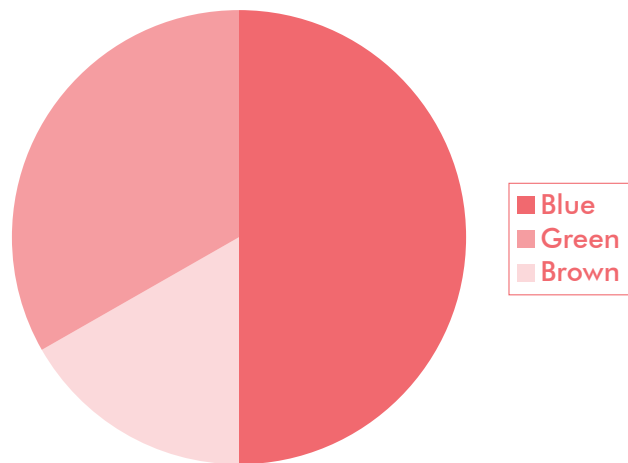
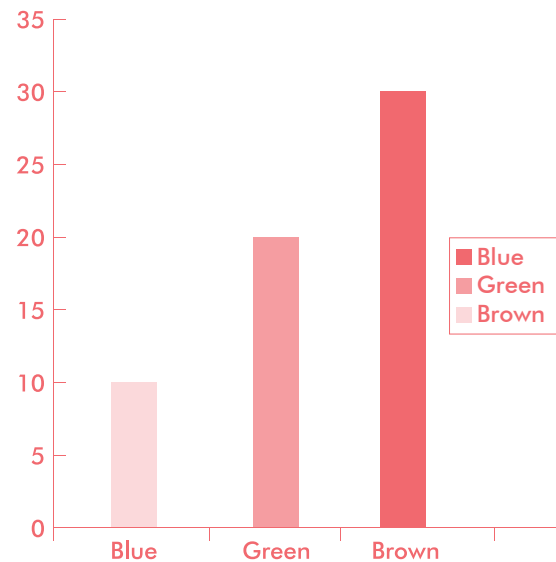
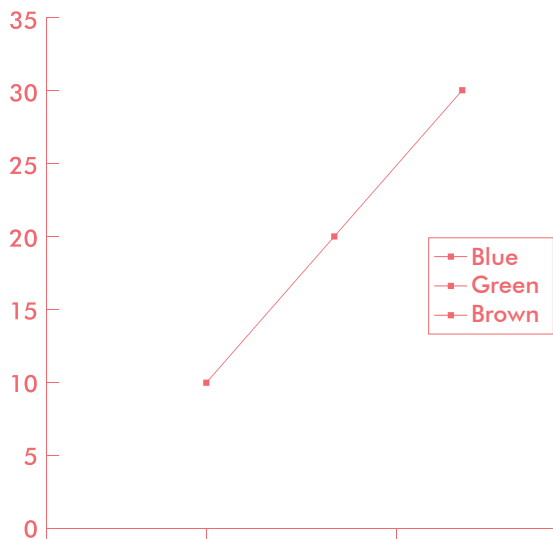
To introduce or review tally charts, consider using this video from [Scratch Garden](#) or have students practice independently using this online game from [MathGames.com](#).

**"A good chart
should make you
see the world in
a new way."
—Uma Wimple**



Choosing a Graph

Point out the different types of charts and graphs throughout the book. Uma uses lots of different charts and graphs, but how does she know which one to choose? As an example, tell students that you've asked sixty students what eye color they have, and you need to decide the best graph to represent your data. Explain that these three graphs show the same data but look very different.



- What are the advantages and disadvantages of using each of these graphs to represent our data?
 - Is one chart easier to understand than another?
- Does each graph tell you the exact number of students that have blue eyes?
- Does each graph tell you how many students *in total* were recorded?

Tip: The [National Center for Education Statistics](#) has an interactive tool that allows you and your students to create digital graphs.

Bar Graph

Bar graphs are one of the many ways data can be visualized. As implied by the name, a bar graph shows data using bars on a table. Bar graphs can be vertical or horizontal. Longer bars mean larger amounts and shorter bars mean smaller amounts. This helps us compare data. Bar graphs are great to use when you want to compare two or more data points. A bar graph will always have two axes. One axis is typically labeled with the categories being compared and the other axis will have numerical values.

Using the data gathered from the tally chart, have students create a bar graph. How does the data compare with their predictions? Was there anything about the data they gathered that particularly surprised them?

- *[Numberock](#) has a fun video and interactive quiz about bar graphs.*
- *Students can practice their bar graphing skills by playing with the [ABCYa Fuzz Bugs](#) or graph germs in [this game](#) from Education.com.*

Labels

Labels are a very important feature in all types of graphs. Labels help the viewer better understand the data in a graph. Is this a graph about favorite pizza toppings or the number of slices people eat? Without labels, no one knows. In a bar graph, labels typically run along the bottom and side of the graph.

As a class, determine the various labels that should be added to the bar graphs, and have students label their graph.



Pie Chart

A **pie chart** is a type of number picture. It is used to compare two or more pieces of data. Usually a pie chart has several colors—one color for each different piece of data. A pie chart is also called a circle graph because it is in the shape of a circle. Pie charts have a few features:

The circle: Represents the entire group of data.

A segment: Represents one piece of data, like a slice of a pie.

Labels: Each “slice” (or segment) of the pie should be labeled. You can label directly on the pie, or you can create a **key** to indicate what each color of the pie represents.

Use the data from your tally chart to create a pie chart. Then ask students to compare their bar graphs with their pie charts. How do the bar graph and the pie chart compare? Is one easier to understand than the other? Why?

Survey

Surveys are a very popular way of collecting data, and are usually conducted with questionnaires. Surveys can be one question or hundreds of questions, and are used to learn about any information that cannot be observed, like people’s interests, wants, needs, and habits. Surveys are typically given to large groups of people, so sometimes, it can be hard to understand the data. This is why survey data can be represented in graphs and charts. Graphs and charts can highlight certain trends or patterns that might be missed otherwise.

One way that Uma Wimple collected data was by asking her family members questions—taking a survey. Create a survey, and tell students to ask their family members the same question: What makes a house housey? Discuss the benefits and drawbacks of including multiple choice responses on the survey.

Ask students: What is the best way for you to chart this information? Have students graph the information they collected using a pie chart or bar graph.

Maps

A **map** is a picture of an area. Maps help visualize something—a building, a state, even a star in the solar system! Maps are commonly used to help people navigate from one place to another. Some maps are very simple, with just a few shapes and colors. Other maps are very detailed.

Key: This section of a map shows labels for the symbols used. This is sometimes referred to as a legend.

Compass: Compasses show direction. They have at least four points: north, south, east, and west.

Scale: A scale shows the relationship between the distance on the map and the distance in real life.

Print out or display maps for students.

Maps:

- [San Francisco Zoo Map](#)
- [Yosemite National Park Map](#)
- [MTA Live Subway Interactive Map](#)
- [Scotland's Snowplows Interactive Map](#)
- [The Oregon Historical National Trail Interactive Map](#)
- [Freedom Rides Interactive Map](#)
- [Poetry Around the World Interactive Map](#)

You can also find other maps online—perhaps ones that relate to current social studies or science units.

Ask students:

- How are these maps helpful? What information do they tell us?
- How and why are the maps different (beyond representing different locations)?
- If students were the mapmakers, what else would they include?
- How are maps different than drawings?

You can use a tool like [Google Maps](#) to show the same geographic location with multiple map formats. Have students point out features that help them better understand a map (a key, a compass, labels of important places, etc.) on each map you explore.



Map the School!

Create a large diagram of the school building. As a class, in small groups, or independently, have students create a map using the diagram. Students could label important places, create a key with symbols, and add other details that would help someone navigate the building.

Challenge students to explain how to navigate from one location in the building to another (for example, from the cafeteria to the nurse's office) using the map they created. Was their map detailed enough? What could they have added to make the directions clearer?

Mapmaking

Which type of map is most fun? A treasure map, of course! Prior to this activity, choose a location for your treasure. Then create a map or use the diagram of your school from the previous activity. Before beginning the treasure hunt, explore the map key (or legend). What do each of the symbols in the key stand for? How do you know? Are there different symbols students would use instead? Discuss.

You might also invite students to do the following, before you begin the treasure hunt:

- Put a star next to the destination.
- Ask students to circle one or more recognizable locations they will pass on the way to the treasure.
- If there is more than one way to get to the treasure, mark the longest and shortest routes.

Discuss which route do they want to take. Why? (You could even tally it!) Print out maps for each student and find the treasure together or in small groups.

Charting Buster's Dream Dog House

Ask students to design and map Buster's dream dog house.

Some questions to consider:

- What are the important parts of this dog house?
- How will they represent them on the map?
- Where does Buster need to go?

Create another map showing the relative location of Buster's dog house to the main (human) house. Invite students to detail and decorate this map creatively.

Venn Diagrams

A **Venn diagram** uses overlapping circles to compare and contrast two categories. Things that are different between the two categories are listed in the outside circles. Things that both categories have in common are written in the intersection of the circles.

Lukey Wimple is interested in moths and butterflies. Create a Venn diagram to illustrate how moths and butterflies are the same and different.

Small Group Practice:

After students have charted Buster's dog house, ask them to partner up and consider: What is similar about their dream dog houses, and what is different? Invite students to use that data to create *another chart*—a Venn diagram. Explain that sometimes creating a chart helps us learn more information or think differently about a subject.

Ask: Does the Venn diagram help students notice anything else? Could they create any other charts with this data?

Lukey Wimple's Story

Lukey Wimple is fascinated by living things, especially butterflies. People who study or collect butterflies or moths are referred to as lepidopterists. Invite students to map a story titled "The Adventures of Lukey Wimple, Lepidopterist."

Story maps are a type of graphic organizer that highlight the key elements in a story—the characters, the setting, the beginning, the middle, and the end.

[View a collection of Story Map templates here.](#)



Explore more about
Uma Wimple Charts
Her House at
umawimple.com!

Tree Charts

Despite an initial struggle, Uma learned that it is the love of her family that makes her house "housey." A special type of chart, known as a **tree chart**, can show all the members of your family. As your family grows, so does the tree. The branches of the trees represent your ancestors and other direct relatives.

Start by creating a tree chart for Uma's family together.

Then have students create a tree chart for their favorite fictional character or historical figure. Have students do a gallery walk of the family trees. Ask students what is similar and different. Like trees in a forest, each family tree is different, but they're all beautiful.

Best Homework EVER!

Uma was so excited when her teacher assigned her something relating to what she already loves to do—make charts! Ask students to write down their dream assignment. Poll the class to see how many other students would be interested in completing each assignment. Take a tally chart and do the most popular one as a class!

"Nothing Is Impossible!"

Lukey Wimple claims that *nothing* is impossible. Is this true? Take a tally of classmates' opinions. Then discuss: Why or why not?

Your Housey House and My Housey House

Uma lives in a house, but people live in lots of different places—apartments, condos, townhouses, igloos, duplexes, shelters, RVs, boats, trailers, cottages, and many more! Discuss these with students and explain that all of these places can be *homes*.

Then ask students: what does Uma mean by "housey"? Make a Venn diagram of the words *house* and *home*. What do these words have in common? How are they different? Ask students: What do they think makes a house "housey"?

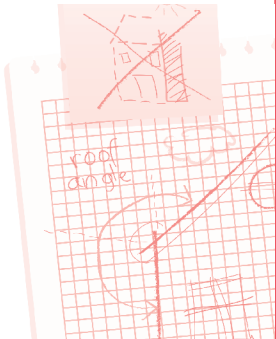
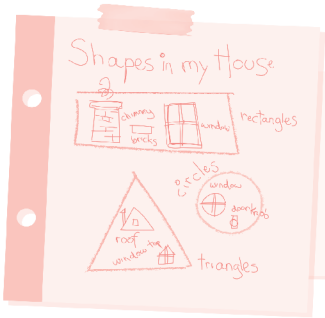
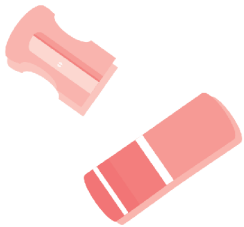
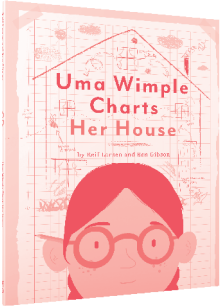
Tally Chart

Reproducible

Name: _____

Once you've tallied and calculated your totals, shade in any rows you do not need!

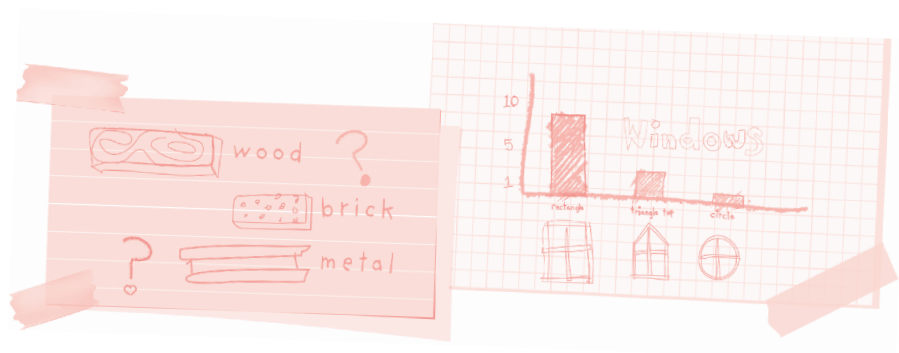
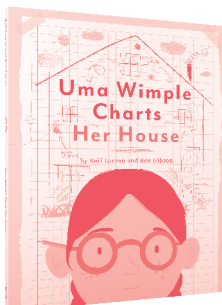
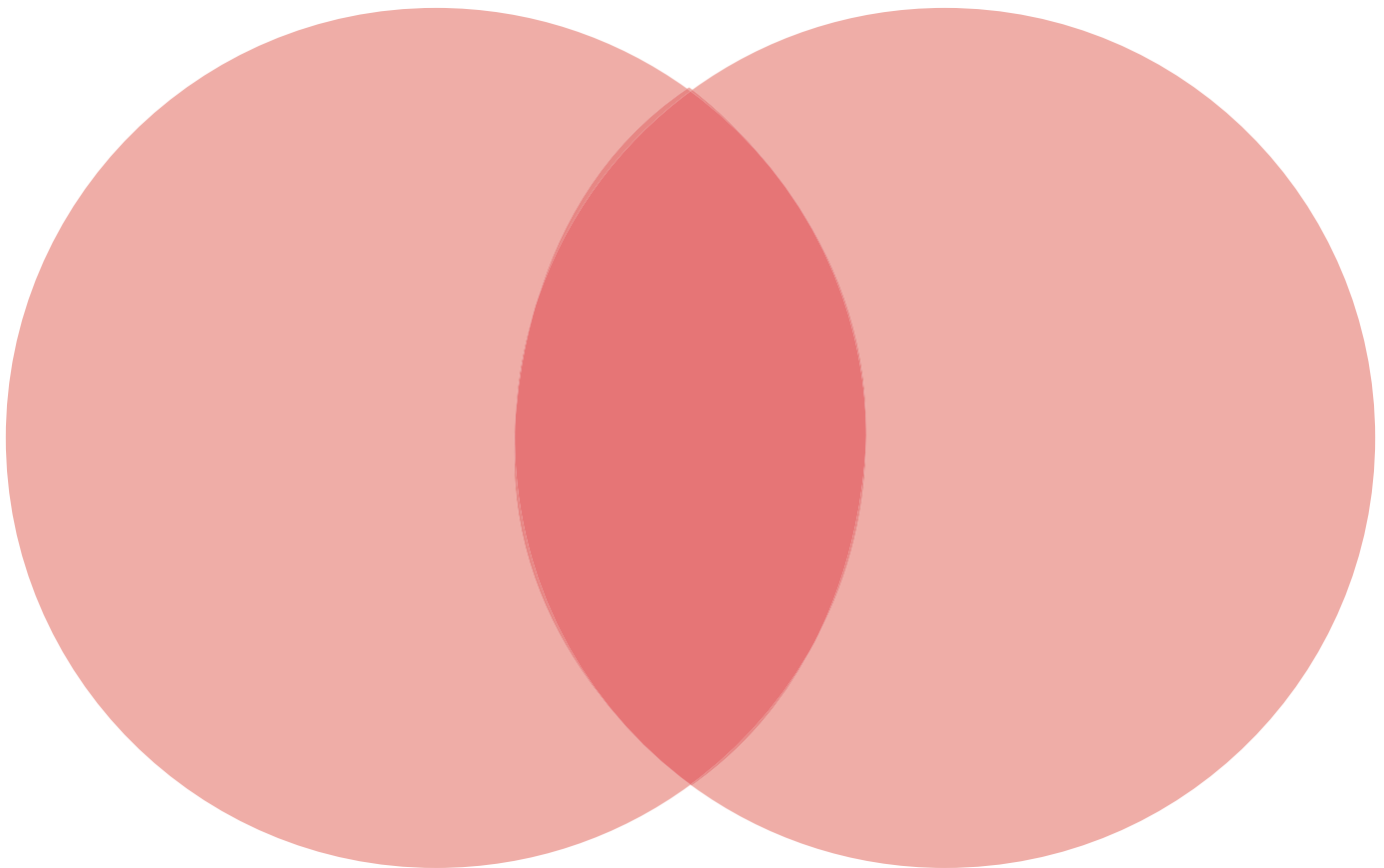
Item	Tally Marks	Number Total



Venn Diagram

Reproducible

Name: _____



Bar Graph

Reproducible

Name: _____

A full-page sheet of white graph paper featuring a uniform grid of thin red lines forming small squares. The grid covers the entire area of the page.