MINNESOTA Literacy COUNCIL

Sharing the Power of Learning

The Minnesota Literacy Council created this curriculum with funding from the MN Department of Education. We invite you to adapt it for your own classrooms.

MASTER
Charts and Graphs: Week 2 of 2

Unit Overview
This 2-week unit is designed to teach students how to use, interpret and make their own different types of graphs and charts.

Unit Objectives:
- Students will learn the purpose of different types of graphs and charts
- Students will learn how to interpret different types of graphs and charts
- Students will practice making their own different types of graphs and charts
- Students will read about different types of graphs and learn vocabulary related to graphs and charts.

Week 1
Monday: Bar Graphs
Tuesday: Circle Graphs
Wednesday: Line Graphs
Thursday: Picture Graphs

Week 2
Monday: Regular Charts
Tuesday: Venn Diagrams
Wednesday: Timelines
Thursday: Flow Charts

MATERIALS
- Teacher Created Resources: Document-Based Questions: Grade 2. 978-1-4206-8372-1 **(TCR2)**
- Teacher Created Resources: Document-Based Questions: Grade 5. 978-1-4206-8375-2 **(TCR5)**
- Teacher Created Resources: Document-Based Questions: Grade 6. 978-1-4206-8376-9 **(TCR 6)**
- Stech-Vaugh: Maps-Globles-Graphs. Book 1. 0-8114-2087-6 (out of print) **(MGG)**
- Terdy, Dennis: Content Area ESL: Social Studies. Linmore Publishing, Inc. 0-916591-06-9 **(ESL SS)**

Graphs and Charts: Monday, Week 2 of 2
Regular Charts

Lesson Objectives:	**Materials:**
Students will... ● Be able to interpret data and understand information from a chart ● Be able to make their own chart	Resources: ● **TCR2 Pgs: 79-81** ● **ESL SS Pg: 3-4**

Activity Ideas:
• Do some pre-reading activities to activate ss' prior knowledge and get ready to read. ● Work with ss to read page 79 of TCR2. Use various reading activities (taking, turns, reading alone, teacher reads, etc.) Have ss under line unknown vocab as they go. Go through vocab as needed. ● Have students study the chart on page 80 Answer any questions as needed. Do they understand what this graph is showing? ● Answer questions on page 81 referring to the graph. ● Now, study the chart on page 3. What is this chart showing? Work to complete the questions on page 4 referring to the abbreviation chart. ● Now, tell the students they are going to make their own charts. Have students brain storm as many countries as they can think of. Make a chart on a large sheet of chart paper (similar to page 80). In the left column write the countries. In the right column write the languages that are spoken in that country. (Some research may need to be done if the students don't know what languages are spoken). Label the chart. Hang it in the classroom.

The Amazon Rain Forest

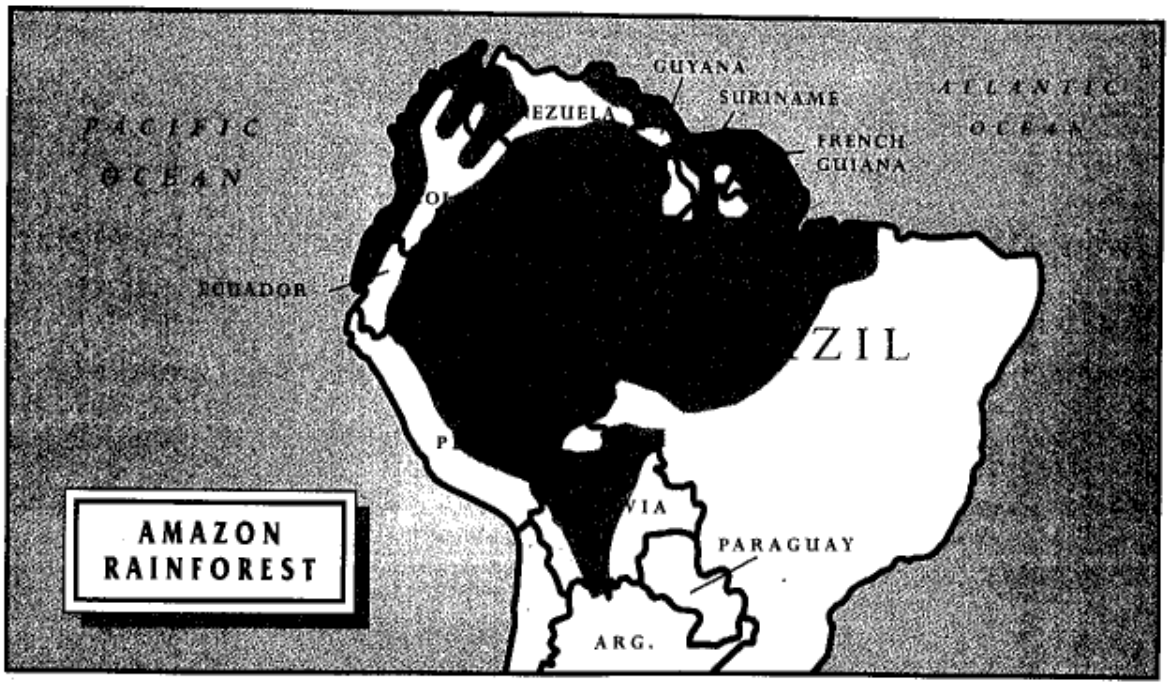
A forest has lots of trees. They grow close together. One type is a tropical rain forest. It is warm and wet all the time. It rains each day! Such forests grow near the equator.

In a rain forest the tops of the trees form a roof. It is called a canopy. Colorful birds and monkeys live there. Plants do, too. Most of them never touch the ground. How? The birds and monkeys find food in the treetops. Some plants grow on the trees. They have roots that hang in the air. They absorb water from the air. They get nutrients from mold and leaves on the tree branches.

Earth's largest tropical rain forest is in South America. It is the Amazon Rain Forest. More than half of the world's different animals and plants live in it! It has three layers. Below the canopy is the understory. Snakes, sloths, and more monkeys live there. Jaguars and turtles live on the forest floor. Banana, cacao, and pineapple trees grow there. Many of its plants give us medicines.

The Amazon Rain Forest is important in another way, too. It is like a giant sponge for carbon dioxide. By taking this gas from the air, Earth stays cooler. If Earth gets too hot, there are bad storms.

The Amazon River winds through this forest. It is big. More than 200 other rivers flow into it. And over 2,000 kinds of fish swim in it.



The Amazon Rain Forest

Foods from the Amazon Rain Forest

Kind of Food or Spice	Where it Grows
avocado	understory tree
banana	understory tree
Brazil nut	canopy tree
cacao (used in chocolate)	understory tree
cloves (spice)	understory tree
lemon	understory tree
lime	understory tree
palm oil	understory tree
passion fruit	just below canopy (vine that grows on trees)
vanilla (flavoring)	just below canopy (vine that grows on trees)

chart adapted from: Knapp, Dr. Brian. *What Do We Know About Rainforests?* New York: Peter Bedrick Books, 1992.

The Amazon Rain Forest

1. Which animal would not be found in the Amazon Rain Forest?

   a. kangaroo b. jaguar c. monkey

2. All of Earth's rain forests grow

   a. in South America. b. near the equator. c. in dry places.

3. Cacao beans are used in making

   a. chocolate. b. cloves. c. peanut butter.

4. Bananas, lemons, and limes are tropical fruits. True or False? Tell why.

5. Look at the chart. What is the only canopy tree listed? Where do most of the trees from which we get food grow?

6. Do you like eating chocolate? Why or why not?

ABBREVIATION	STATE	CAPITAL
AL	Alabama	Montgomery
AK	Alaska	Juneau
AZ	Arizona	Phoenix
AR	Arkansas	Little Rock
CA	California	Sacramento
CO	Colorado	Denver
CT	Connecticut	Hartford
DE	Delaware	Dover
FL	Florida	Tallahassee
GA	Georgia	Atlanta
HI	Hawaii	Honolulu
ID	Idaho	Boise
IL	Illinois	Springfield
IN	Indiana	Indianapolis
IA	Iowa	Des Moines
KS	Kansas	Topeka
KY	Kentucky	Frankfort
LA	Louisiana	Baton Rouge
ME	Maine	Augusta
MD	Maryland	Annapolis
MA	Massachusetts	Boston
MI	Michigan	Lansing
MN	Minnesota	St. Paul
MS	Mississippi	Jackson
MO	Missouri	Jefferson City
MT	Montana	Helena
NE	Nebraska	Lincoln
NV	Nevada	Carson City
NH	New Hampshire	Concord
NJ	New Jersey	Trenton
NM	New Mexico	Santa Fe
NY	New York	Albany
NC	North Carolina	Raleigh
ND	North Dakota	Bismarck
OH	Ohio	Columbus
OK	Oklahoma	Oklahoma City
OR	Oregon	Salem
PA	Pennsylvania	Harrisburg
RI	Rhode Island	Providence
SC	South Carolina	Columbia
SD	South Dakota	Pierre
TN	Tennessee	Nashville
TX	Texas	Austin
UT	Utah	Salt Lake City
VT	Vermont	Montpelier
VA	Virginia	Richmond
WA	Washington	Olympia
WV	West Virginia	Charleston
WI	Wisconsin	Madison
WY	Wyoming	Cheyenne
PR	Commonwealth of Puerto Rico	San Juan

GRAPHICAL LITERACY.
Look at the table. Answer the questions.

1. What is in the left column?_____
2. What is in the middle column?_____
3. What is in the right column?_____
4. What is the abbreviation for Arkansas?_____
5. What is the abbreviation for Maryland?_____
6. What is the abbreviation for North Carolina?_____
7. What is the abbreviation for Pennsylvania?_____
8. Which state is MI?_____
9. Which state is AL?_____
10. Which state is OK?_____
11. Which state is NH?_____
12. What is the capital of RI?_____
13. What is the capital of KY?_____
14. What is the capital of TN?_____
15. What is the abbreviation for West Virginia?_____
16. What is the abbreviation for Puerto Rico?_____
17. Which state is MO?_____
18. What is the capital of Vermont?_____
19. Which state is CT?_____
20. What is the capital of MS?_____
21. Which state is WI?_____
22. Which state is SC?_____
23. What is the capital of New York?_____
24. Which state is NM? _____
25. Which state is LA? _____
26. What is the abbreviation for Rhode Island? _____
27. What is the capital of Indiana? _____
28. What is the capital of the U.S.?_____

Graphs and Maps: Tuesday, Week 2 of 2
Venn Diagram

Lesson Objectives:	**Materials:**
Students will... ● Be able to interpret data and understand information from a Venn Diagram ● Be able to make their own Venn Diagram	Resources: ● **TCR2 Pgs: 76-78**

Activity Ideas:
● Work with student to read page 76 of TCR2. Use various reading activities (taking, turns, reading alone, teacher reads, etc.) Have students under line unknown vocab as they go. Go through vocab as needed. ● Have students study the chart on page 77 Answer any questions as needed. Do they understand what this graph is showing? ● Answer questions on page 78 referring to the graph. ● Choose a topic for the students to make their own Venn Diagram. (US vs. a country of your choosing, education in the US vs. a country of your choosing etc etc...) ● Draw a large Venn Diagram on a piece of chart paper and have students fill it in. ● If time, have students journal about the diagram and their opinions on it.

Mount Kilimanjaro

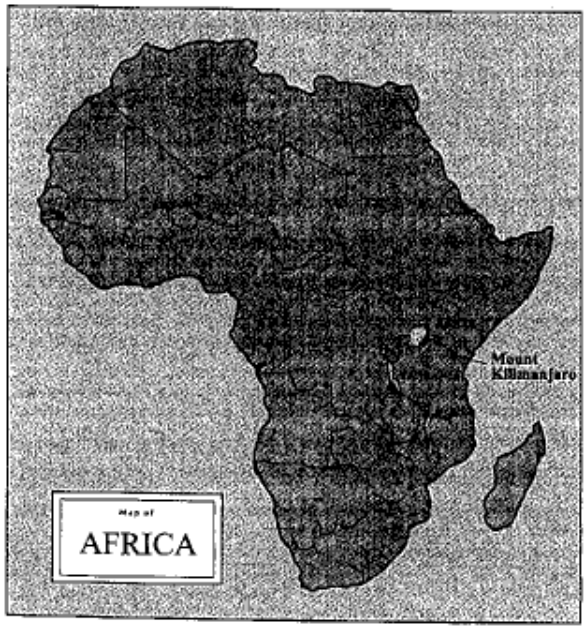
Mount Everest is the tallest mountain on Earth. It is in Asia. In Africa, Mount Kilimanjaro is the tallest mountain. It lies in Tanzania on the border with Kenya. Parkland surrounds the mountain. It is close to the equator.

The slopes of Kilimanjaro have good soil. Farmers grow coffee, bananas, and cacao. (Cacao is used to make chocolate.) Streams flow down the mountain. They bring water to the valley below. Crops grow there, too.

Mount Kilimanjaro is an old volcano. It has not erupted for at least 170 years. But melted rocks lie deep inside it. So steam and sulfur escape near Uhuru Peak. People stay away from these spots. Sulfur smells like rotten eggs!

Kilimanjaro has two peaks. Uhuru Peak stands 19,340 feet high. That's almost four miles up! It is cold that high in the sky. Bitter winds blow. This peak always has ice and snow. The mountain's other peak is Mawensi. It is 16,890 feet high. It does not have ice or snow.

Each year many people go to Mount Kilimanjaro. They want to climb this beautiful mountain. There are five main trails. It takes about five to eight days to reach the top and come back. Climbers stay in huts that have been built along the way.



Mount Kilimanjaro

Mount Kilimanjaro

1. Mount Kilimanjaro is

   a. in Asia. b. an old volcano. c. far from the equator.

2. The name of Mount Kilimanjaro's taller peak is

   a. Tanzania. b. Mawensi. c. Uhuru.

3. What is the height of Mount Kilimanjaro's shorter peak?

   a. 16,890 feet b. 19,340 feet c. 29,028 feet

4. Crops grow on the slopes of Mount Kilimanjaro. True or False? Tell why.

5. Look at the Venn diagram. Which mountain had climbers reach its peak first? When? Which mountain can only be climbed during May?

6. Would you like to climb Mount Kilimanjaro? Why or why not?

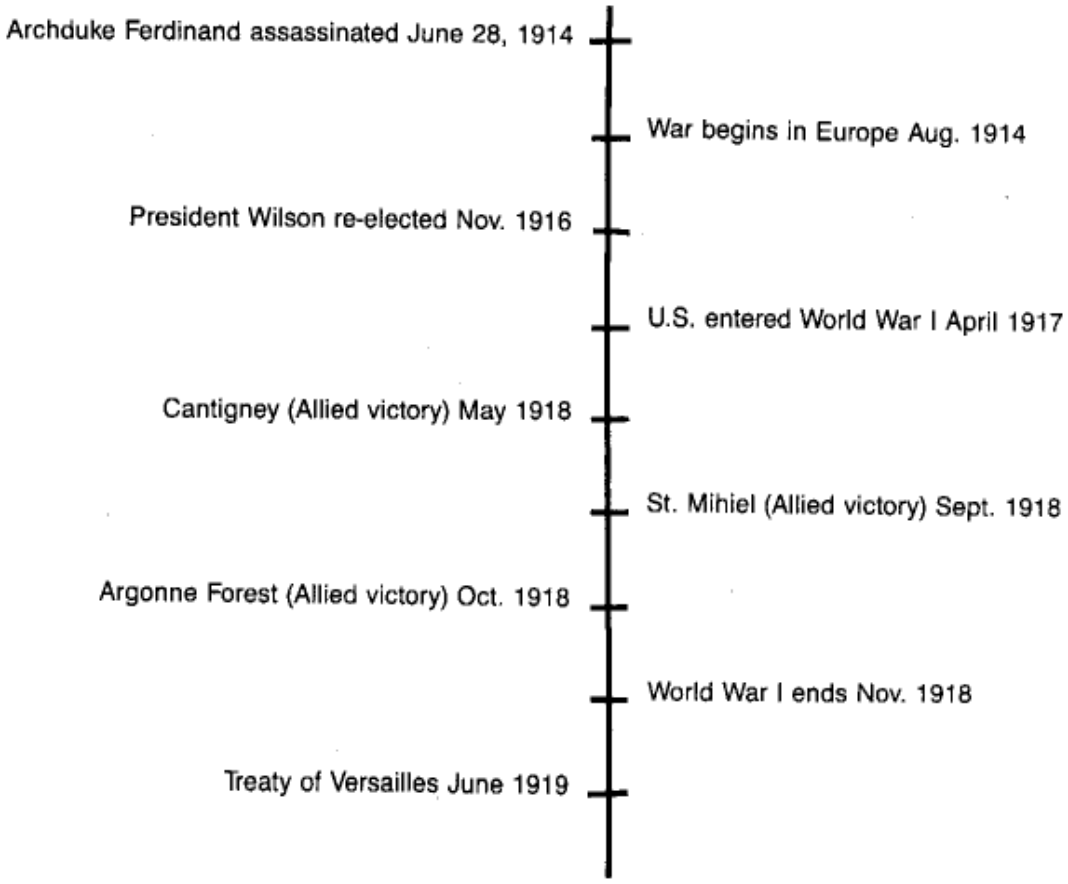
Graphs and Charts: Wednesday, Week 2 of 2
Time Lines

Lesson Objectives:	**Materials:**
Students will... ● Be able to interpret data and understand information from a timeline ● Be able to make their own timeline	<u>Resources:</u> ● **ESL SS Pgs: 102, 130** ● **MGG Pg: 58-59**

Activity Ideas:
● Work with students to complete worksheets on time lines. Be sure to discuss vocabulary. ● Have students brainstorm 6-8 major events that have happened in their life (when they were born, children were born, getting married, when they came to the US, getting citizenship etc etc....) Have them write the date and year when it happened (if they can remember). Have them organize them in chronological order. ● Next, give them a blank piece of paper and makers. Have them make their own time line of their life. ● Have students share their time lines with the rest of the class.

GRAPHICAL LITERACY.
Read the timelines. Answer the questions.

WORLD WAR I TIMELINES



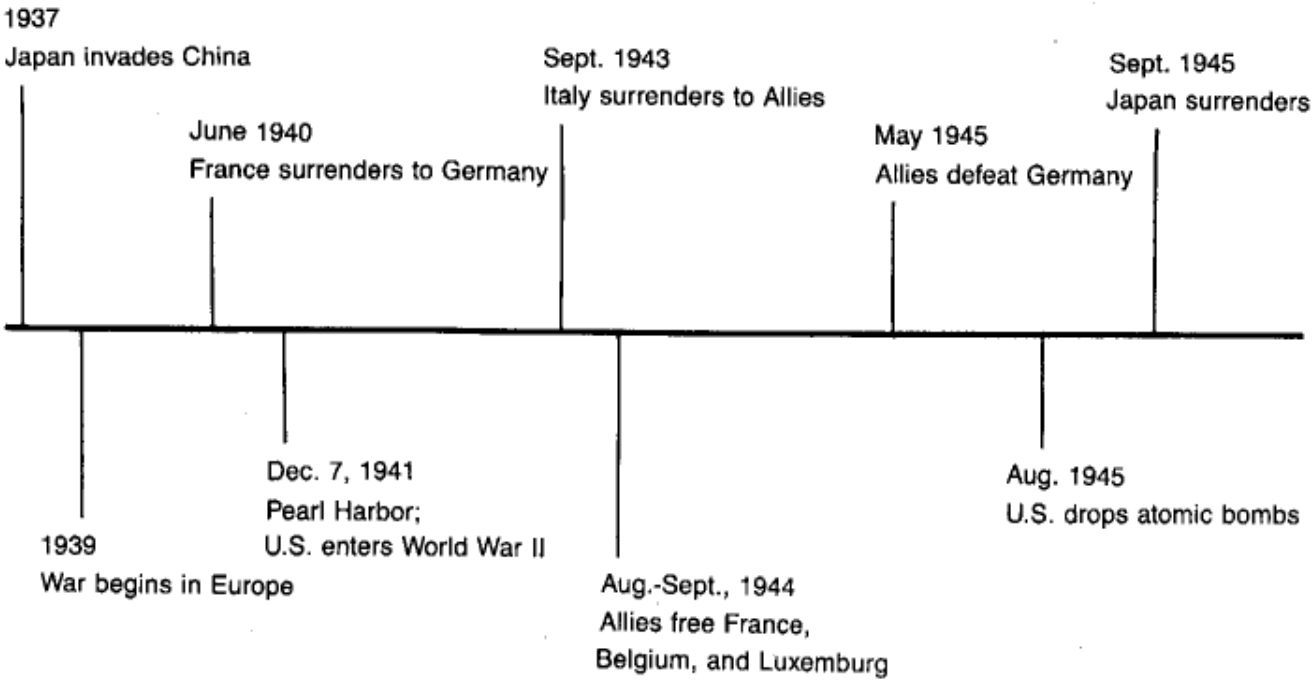
1. When does the timeline begin? _____
2. When does the timeline end? _____
3. What is the first event? _____
4. When was President Wilson re-elected? _____
5. When did the U.S. enter World War I? _____
6. Name two major Allied victories. _____

_____

7. When did World War I end? _____
8. How long did the U.S. fight in the war? _____
9. When was the Treaty of Versailles signed? _____

GRAPHICAL LITERACY.
Read the timelines. Answer the questions.

WORLD WAR II TIMELINES



1. When did Japan invade China? _____

_____

2. When did World War II begin in Europe? _____

_____

3. When did the Allies begin to win the war? _____

_____

4. When did the U.S. drop the atomic bombs on Japan? _____

_____

5. When did Japan surrender to the Allies? _____

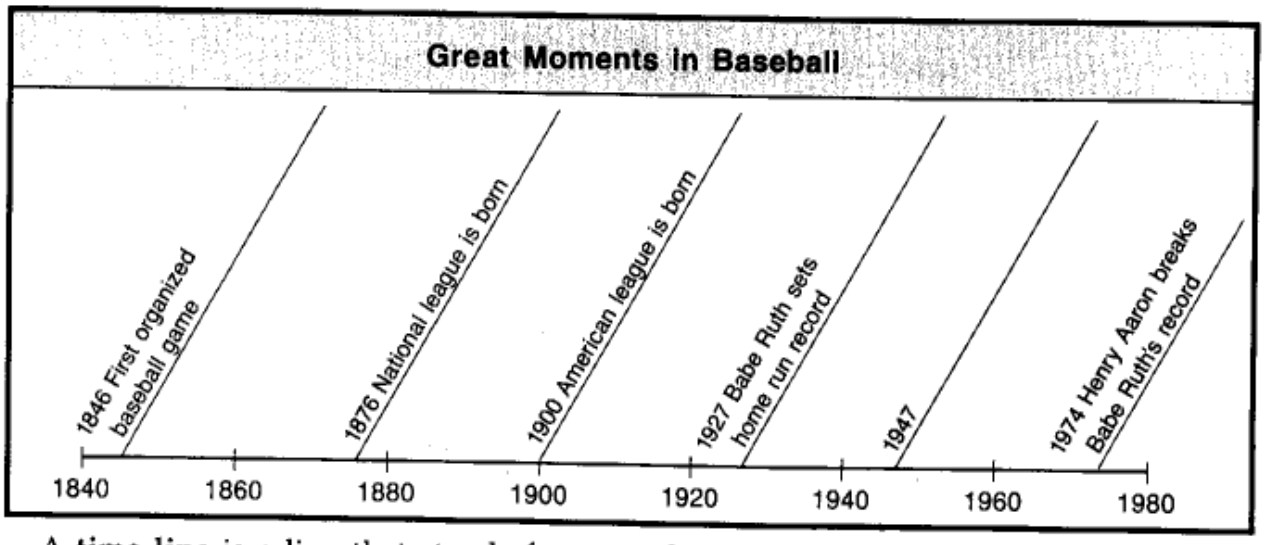
_____

6. Did Italy surrender before Germany? _____

7. Did Japan surrender after Germany? _____

8. Did Italy surrender before Japan? _____

Time Lines



A **time line** is a line that stands for a number of years. Marks on the line show the order in which events happened. They also show you how far apart events are in time. This time line shows great moments in the history of baseball.

☑ Time Line Attack!

Follow these steps to read this time line.

1. Read the title. This time line shows _____

   _____.

2. Read the dates along the bottom of the time line. This time line begins in _____ and ends in _____.

3. Read the time line from left to right.

   What happened in 1900? _____

   What happened in 1927? _____

4. Study the order of events on the time line. Write before or after.

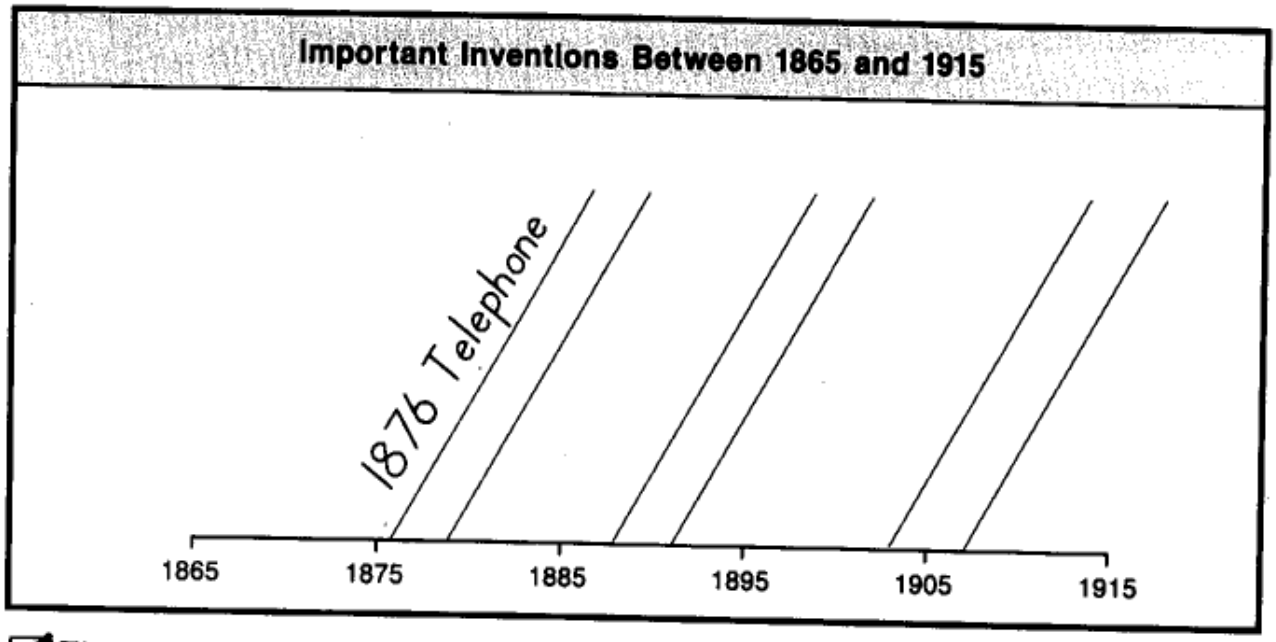
   The National League was born _____ the American League.

   Henry Aaron broke Babe Ruth's home run record _____ the National League was born.

5. Add to the time line. In 1947, Jackie Robinson joined the Brooklyn Dodgers. He was the first black major league player. Write "Jackie Robinson is first black major league player" on the line above 1947.

Name _____

Reading a Time Line



☑ Time Line Attack!

Follow the steps to read and finish this time line.

1. Read the title. This time line will show _____

   _____.
2. Read the dates along the bottom of the time line. This time line begins in _____ and ends in _____.
3. Put the events in order. Read the inventions below. Number them 1 through 6 in the order they happened.

   _____ 1888 Camera _____ 1891 Zipper

   _____ 1903 Airplane _____ 1907 Helicopter

   _____ 1876 Telephone _____ 1879 Lightbulb
4. Write the events in order on the time line. Write the events in order, from left to right on the time line. The first event is written for you.
5. Study the order of events. Write before or after.

   The telephone was invented _____ the zipper.

   The lightbulb was invented _____ the airplane.

   The helicopter was invented _____ the camera.

Graphs and Charts: Thursday, Week 2 of 2
Flow Charts

Lesson Objectives:	**Materials:**
Students will... ● Be able to interpret data and understand information from a flow chart ● Be able to make their own flow chart	Resources: ● **TCR2 Pg: 31-33** ● **MGG Pg: 60**

Activity Ideas:
● Work with students to complete the worksheets on flow charts. Be sure to talk about the structure of flow charts and why they might be used. Also be sure to work though the vocabulary. ● Now let students know they will be making their own flow chart. (Suggested topic: How to learn English in the US (what are the steps) otherwise choose your own topic) ● Have students brain storm ideas/steps and make sure to put them in order. ● Now let students decide the design of the flow chart. Use the worksheets as examples. ● Have students fill in the flow chart. If time, ask coordinator if class can present their flow chart to another class. Hang flow chart in classroom.

Octopus on the Loose!

People go to a big aquarium to see animals. It has animals that live in water. Fish, lobsters, and dolphins live in big tanks. In one aquarium the workers saw that their fish were vanishing. What was going on?

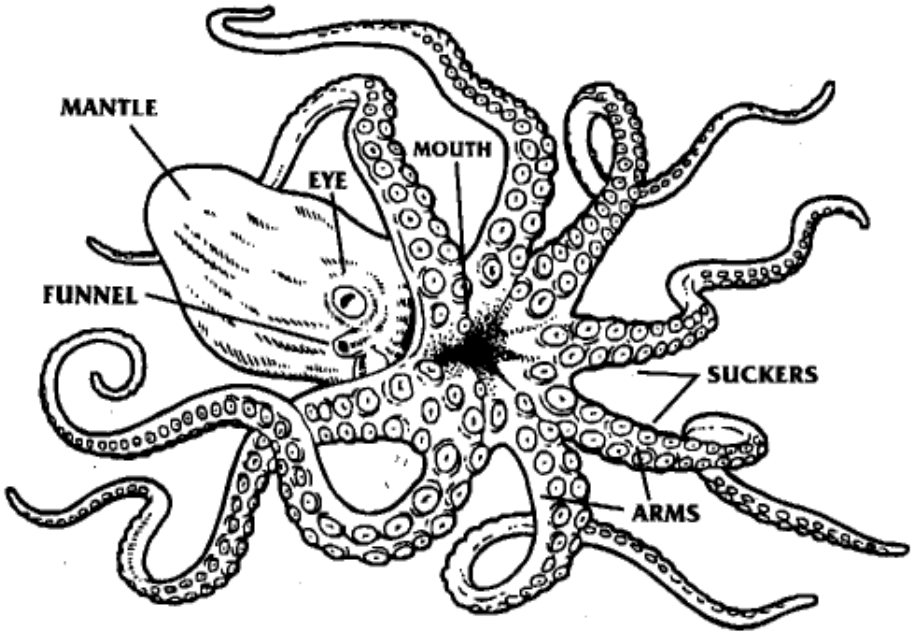
They set up a camera. It took pictures at night. The next day the workers watched the film. They were shocked. An octopus climbed out of its tank. It went into other tanks and ate fish. Then the octopus went back to its own tank!

An octopus has eight "arms" called tentacles. They are flexible. They have no bones. In fact, an octopus does not have any bones in its body. Each one of its tentacles has a row of suckers. They act like the suction cups that hold things onto windows or mirrors. These suckers can feel, grab, and taste. They let the octopus climb.

Octopuses are smart. Scientists know that a mother octopus guards her eggs for six months. She does not eat at all. After the babies hatch, the mother leaves. She looks for food. She does not come back.

The blue ring octopus is the deadliest kind. Like all octopuses, it uses its tentacles to grab its prey. Then it bites its victim. Its poison can kill a human.

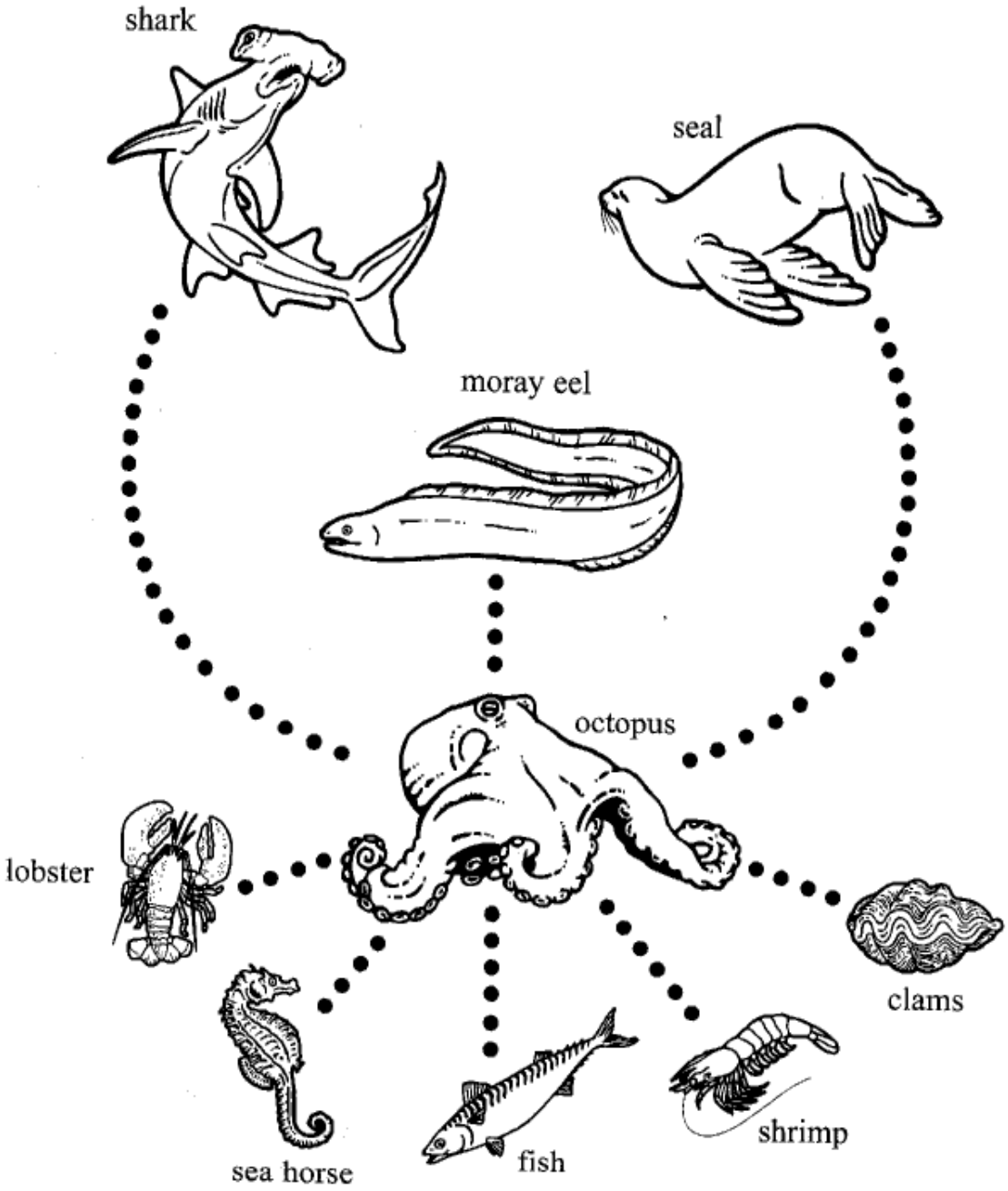
Moray eels eat octopuses. If an octopus gets afraid, it squirts a dark liquid. It forms a cloud in the water. This confuses the eel. And it gives the octopus time to get away.



Octopus on the Loose!

Sea Food Web

The animals are eaten by the ones above them.



Octopus on the Loose!

1. An octopus has no

a. brain. b. bones. c. suckers.

2. A mother octopus

a. lays her eggs and leaves. c. guards her eggs until they hatch.

b. raises her young.

3. When does an octopus squirt a dark liquid into the water?

a. to get away from an animal that wants to eat the octopus

b. to confuse an animal that the octopus wants to eat

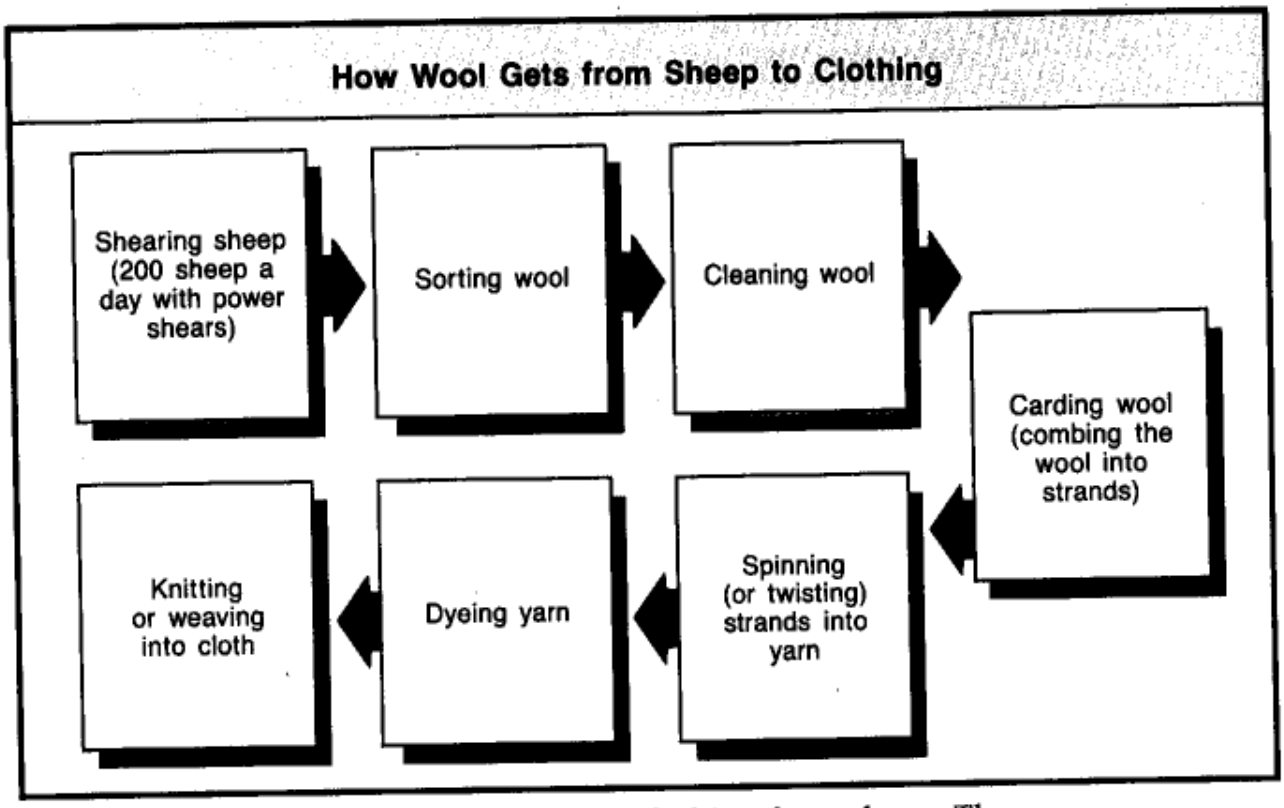
c. to hide its babies

4. An octopus has six tentacles. True or False? Tell why.

5. Look at the sea food web. Name two animals the octopus will eat. Name an animal that eats the octopus.

6. Should a blue ring octopus be shown in an aquarium that people visit? Why or why not?

Flow Charts



The class wanted to know how we get clothing from sheep. The teacher made a flow chart to show the steps from sheep to clothing. A **flow chart** is a drawing that shows the steps for doing or making something.

☑ Flow Chart Attack!

Follow these steps to read a flow chart.

1. Read the title. This flow chart shows the steps for

   _____.

2. Read the steps. Follow the arrows. This flow chart starts at the top left corner. The first step in getting wool for clothing is

   _____.

   The last step is _____.

3. Study the order of the steps.

   Spinning or twisting takes places after _____.

   Before the wool is carded, it has to be _____ and _____.