Cedar Lake Historical Association – *Educator Resources*

Rationale for Visit and Activities

Social Studies

3.1.4 Give examples of people, events and developments that brought important changes to your community and the region where your community is located.

3.1.5 Create simple timelines that identify important events in various regions of the state.

3.1.6 Use a variety of resources to gather information about your region's communities; identify factors that make the region unique, including cultural diversity, industry, the arts and architecture.

3.1.7 Distinguish between fact and fiction in historical accounts by comparing documentary sources on historical figures and events with fictional characters and events in stories.

3.1.8 Describe how your community has changed over time and how it has stayed the same.

Science

3-5.E.1 Identify a simple problem with the design of an object that reflects a need or a want. Include criteria for success and constraints on materials, time, or cost.

3-5.E.2 Construct and compare multiple plausible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5.E.3 Construct and perform fair investigations in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

Timelines

Introduction In this lesson, young students will gain a frame of reference for understanding history and for recognizing that the past is different depending on who is remembering and retelling it. They will construct a timeline based on events from their own lives and family histories. This will give them a visual representation of the continuity of time. They will also be able to see that their own personal past is different in scope from their family's past, or their town/city's past. Listening to the contributions of several students and writing things in chronological order during this lesson will help students to build a foundation for later activities.

Discussion

1. Draw a long horizontal line on the board. Write the date of the first day of school at the beginning of the line and today's date at the end.
2. Ask the students to identify an event from this school year's history or "the past." Explain that the past means things that have already happened.
3. Record the event on the time line, generalizing its location between the two benchmarks.
4. Ask students to relate a few more events and record them on the line, appropriately spacing them.
5. Once all students seem to understand the meaning of "the past," ask for a few students to tell an event from when they were babies. Do they remember these events? If not, how do they know about them? Refer back to the events from the past that have been listed. Just as the class has a history, each family also has an important history made up of events from the past.
6. Have students brainstorm some events in their families' histories. Examples might include births, deaths, marriages, immigrations, graduations, vacations, adoptions, moves, opening of a family business, etc. Be sure to reinforce that every family is different, and therefore, every family will have different events in its past that make up its history.
7. Optional: Demonstrate a timeline using events from your own family history. Write the events and the dates and have the students help you put them in chronological order. Optional: Show timelines available through the Internet (softschools.com, ipl.org, timeforkids.com).

Activity 1 – Pre-visit

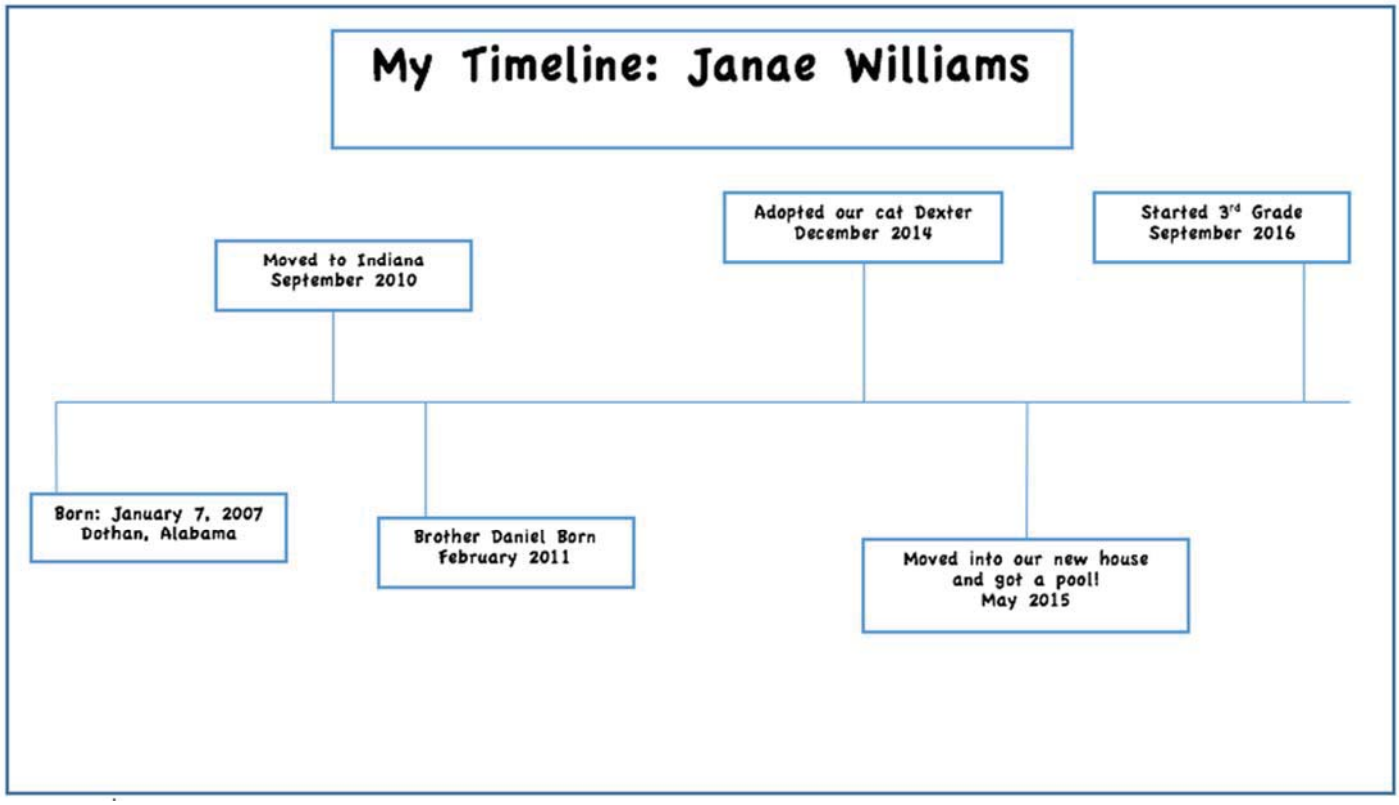
Working in conjunction with someone at home, each child will create a family timeline that contains events from his/her own family history. This activity should be completed before your students visit the Cedar Lake Historical Association Museum.

- Students should list 5-7 events that stand out in their memory. (Young students can have an adult scribe for them, but they should be familiar with the events that are included on their timeline.)
- Determine a required base format for ease of grading. Examples include: 11 x 17'' paper, digital, adding machine tape, pictures vs. no pictures, presentations, etc... A quick search on Pinterest can provide additional ideas.
- Encourage students to select events that are "spread out" across their short life spans.
- Provide feedback on projects prior to your museum visit.

Activity 2 – During the Visit

Students will create a timeline for a topic related to the Cedar Lake Historical Association Museum and the Town of Cedar Lake.

- Students should bring a notebook to record 5-7 events from one of the following:
  - ✓ History of the Town of Cedar Lake
  - ✓ History of the Cedar Lake Historical Association Building and Museum
  - ✓ The Ice Industry Room
  - ✓ Another room or topic of your choice
- Encourage students to take notes, not just about an event and date, but to include some details either through information provided by the museum curator or through general observation.



The Ice Industry

Introduction This activity will highlight the ice farming industry in Cedar Lake in its early years. Addressing both social studies and science topics and standards, students will be challenged to think about the trials of the industry as well as being an early settler of Cedar Lake. The culminating activity gives teams of students an opportunity to try their hand at engineering a solution for a problem that ice farmers of this era encountered in transporting ice carefully.

Discussion

1. Draw a chart on the board with two columns.
2. Ask students what the term "modern conveniences" might mean. Ask them to identify items from home or school that might be considered modern conveniences and designed to make our lives easier.
3. Place a list of 4 or so items on one side of the chart. Add a "refrigerator" to the list if the students did not offer it up as an option.
4. Continue the class discussion or break students into groups to brainstorm what people may have done or used prior to the invention of each of these modern conveniences. Discuss.
5. Introduce the idea and importance of "ice farming" to the students and explain to them that Cedar Lake was leader in this area.
6. Share the video from this Wikipedia link: https://en.wikipedia.org/wiki/Ice_cutting. This 6-minute video is shows how ice farming was accomplished. Fast forward as necessary, but ask the students to make observations about the process, taking notes about tools, people, step-by-step process, etc…
7. Generate a conversation about where the ice might go when it left Cedar Lake (to places that were warmer and didn't have a frozen lake in their back yard!), and how it got there.
8. Finally, ask the students what the problem would be moving ice from a colder environment to a warmer environment. The next activity will give students a chance to investigate and search for a solution to this problem.

Activity 3 – Ice Farming Investigation

Students will work in groups to keep an ice cube from melting. The materials listed below are suggested, but additional materials can be added to offer more options for the students to experiment with. Examples could be fabric, felt, card stock, plastic wrap. Supplies are limited. Each group will be provided with one of each of the listed items, unless otherwise listed. A group may swap one item on the list for another – for example, wax paper for newspaper.

Materials (per group)

- ice cube (1 extra cube will be needed to be used by the class as the "control"
- shoe box
- wax paper (1 sheet)
- masking tape (unlimited)
- newspaper (1 sheet)
- aluminum foil (1 sheet)
- rubber bands (4)

Student groups should work together to design and build a prototype that will keep their ice cube from melting as long as possible. You may choose to turn the activity into a contest, seeing whose cube lasts the longest. Multiple investigations and chances to redesign and test again most closely mirror the actual engineering process, as does limited the resources for their designs. Watch the "control cube" as your indicator for checking the others. ~30 minutes is a typical melt time in a classroom.

LAB: Solving the Ice Transportation Problem Date_____

Engineering Team Name _____

Problem to be Solved	Hypothesis (Idea About How to Solve the Problem)

1. **Hypothesis** – Sketch a picture and/or write out your team's idea about how to solve the problem of carefully transporting ice, using the materials provided by your teacher.
2. **Build –** Use your materials to create a transportation device for your ice. You can wrap the cube or cover the box or do anything else you can think of, using the materials you have.
3. **Predict –** Make a prediction about how long you think some part of your cube will remain solid. _____ minutes
4. **Test –** When all groups are ready, you will test your transporter. Your teacher will have one ice cube to be used as the "control" cube. It will not be placed in any transporter.
5. **Observations and Conclusions –** After the control cube is completely melted, carefully check your cube.
    a. Do you still have a cube? (circle one) **Yes** **No**
    b. Estimate the size of your cube if you were to put it on a ruler: _____
    c. On the lines below, explain the results of your test. Be sure to include information about the following:
        i. Explain <u>why</u> you decided to use the materials your team chose.
        ii. Compare your prediction to your results.
        iii. Describe what changes you would make to the design if you could rebuild it and try again.

Name Engineering Team

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