Author: Maple Ridge MuseumSubjects and Grade Level: Social Studies (Gr. 2), Science (Gr.3)Objectives: Make history and historical activities and games more relevant. Understand howspinning devices like this can be used to separate mixtures by density.

LESSON PLAN: WHIRLIGIGS

Materials: Thick cardstock, 3 ft of String, Markers For detailed instructions: https://www.sciencefriday.co m/educationalresources/measure-therotational-speed-of-a-toy/ Additional Notes: "Whirligig" is a universal term for a spinning object. Other examples include pinwheels & weather vanes.

# POSSIBLE OPENING QUESTIONS:

How do you entertain yourselves? What are your toys made out of? What ways can you think of to separate solids from liquids? What about one liquid from another?

### PROCEDURE/STEPS:

Social Studies (Gr. 2)

- 1. Have a discussion about how people used to entertain themselves.
- 2. Explain how to make whirligigs
- 3. Let the children make their whirligigs.
- 4. Conclude with a discussion about why people in the past would have entertained themselves this way.
- Science (Gr.3)
- 1. Have a discussion about how scientists and researchers may need to separate solid from a liquid or one liquid from another. Talk about how the force of spinning can cause this kind of separation.
- 2. Explain how to make whirligigs.
- 3. Let the children make their whirligigs.
- 4. Conclude with a discussion about how this type of toy could be used to separate materials by density

## DISCUSSION AND REVIEW:

Discussion question ideas: Why do you think people made toys out of household items like paper and string? Why do you think people would need to separate solids from liquids? Why do you think the denser materials move outward?

# ASSESSMENT:

ENRICHMENT:



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ESSON PLAN: WHIRLIGIGS

#### BACKGROUND INFORMATION:

- Most whirligigs are powered by hand however some are powered by wind or motors.
- Centrifuges which are spinning machines used in labs to either separate gases, liquids and solids were inspired by this type of toy.
- There is also a long history of whirligigs as folk art in North America however when this tradition began is unclear.
- The paperfuge is a simple low-cost, non-electrical centrifuge, inspired by the whirligig and designed by Stanford researchers. It was designed to be used by doctors in developing countries.
- The oldest known form of whirligigs were made with buttons.
- Some First Nations cultures had a similar toy dating back to 500 BCE.
- This type of toy (using a button, a coin or a token instead of paper) was a common toy during the Great Depression.

