

# **Glaciers & the Changing Earth (#5)**

Grade Level: 3

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## **National Content Standard Alignment**

- Science (NSTA):
- Content Standards A, D & F
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- English Language Arts (NCTE):
- 3, 7, 11 & 12

## **Student Learning Objective(s)**

- SWBAT understand how glaciers affect landscape.

## **Assessment**

- Formal: Students will complete a worksheet and teacher will provide written feedback
- Informal: Teacher observation and questioning throughout the lesson

## **Materials/Resources**

*Stone Wall Secrets* by Kristine and Robert Thorson

Student's "stone wall journals"

Worksheet #4 (found in "appendix – worksheets" document)

Rectangular buckets half filled with sand (one for each group)

Small plates

Ice cubes

Clay strips

## **Learning Activities**

## Initiation

- Teacher begins lesson saying, “We have been studying stone walls and how the colonists were able to dig rocks out of the earth, but has anyone ever wondered how the rocks first got in the ground? What do you think about that?” Teacher waits for student responses.
- Teacher reads aloud and discusses excerpts from *Stone Wall Secrets*, paragraph beginning on page, “Reaching below the...” (page with woodpecker illustration) and ending on paragraph “as it speaks to me” (page with mammoth illustration).
- Teacher explains that the next activity/experiment will help illustrate what happened to the earth during the ice age when glaciers covered where we now live.

## Lesson Development

- Directions for experiment are as follows:
  - One student in the group will take an ice cube and run it along the top of the sand in the bucket.
  - Students are to watch what happens to the ice cube, as well as the sand in the bucket, which represents a landscape (some student response examples: “hey, the ice cube is cutting off and melting!” “yea, the rocks are smashing down”)
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  - 2. Now students are to scrape their ice cube (with sand on it) across the clay strip that they have
  - been given. They must observe what happens to the clay strips.
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3. A class discussion is held regarding what happened during their experiment and what happened to the land when glaciers came and pushed rocks down into the ground, leaving the
- rocks scarred with scratches, yet somewhat smooth on the surface.

## Closure

- Worksheet #4 is handed out and parts 1 and 2 are read aloud and then completed by
- students. Teacher may rephrase questions or elaborate to help students understand the scientific process. For example, teacher encourages students by saying, “think and imagine a glacier sliding through a forest; initially, no scientist really knows what happens, but has to first imagine lots of possibilities (causes and consequences).”
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- Students are directed to complete part C of the worksheet individually and color it in to glue into their “stone wall journals.”
- Time-permitting, students may share their work with classmates or the entire class.