

**Elder Quote/Belief:**



*“ I used to walk twelve hours, thirteen hours from Port Graham to Port Chatham to Portlock (Koyuktolik Bay) when I was twelve or thirteen, whole bunch of us..... we walked and talked twelve or thirteen hours all day.  
-Anesia Metcalf, Port Graham*

**Grade Level: 3-5**

**Overview:** The Sugpiaq traveled by land and water to trade, hunt, and fish. Land trails through the region connected villages, hunting sites, and allowed the Sugpiaq to portage their qayaq due to bad weather and take an overland route to another body of water.

**Standards:**

<i>AK Cultural:</i>	<i>AK Content Science:</i>	<i>CRCC:</i>
<b>D (1)</b> Culturally-knowledgeable students are able to engage effectively in learning activities that are based on traditional ways of knowing and learning.	<b>F (3)</b> A student should understand the dynamic relationships among scientific, cultural, social and personal perspectives.	<b>G (2)</b> Students should be able to read local, regional and navigational maps.

**Lesson Goal:** To learn about traditional land travel throughout the Chugach Region.

**Lesson Objective(s):** Students will:

- Learn methods used by the Sugpiaq/ Eyak people to mark a trail.
- Create trail markers from various materials for a local trail.

**Vocabulary Words:** Sugt'stun Dialects

English:	Prince William Sound:	Lower Cook Inlet:	<a href="#">Eyak:</a>
Tree	nuguwaggtuq	napaq	lis
Blazing		nallunaiggkutaq	
Travel I am traveling They are traveling	ang'asik ang'asiggluni ang'asigglutukut	ang'asik	<a href="#">qe</a> (Travel by boat)

### **Materials/Resources Needed:**

- If possible, invite an Elder or Recognized Expert from the Region to share their traditional ecological knowledge (TEK) and expertise to enrich the lesson(s).
- Chugach Region Map
- [Alexandrovsk No. 2 pg. 54; Trails](#)
- 20 Whistles with lanyards
- Trail Marking Materials (rocks, paints, tin can lids, wood stakes)
- BLM Marking lines for corners
  - <https://www.blm.gov/cadastral/Manual/73man/id161.htm>
- OPTIONAL: To enhance lesson, use the SimTable (borrow from Heritage Preservation)

### **Teacher Preparation:**

- Contact an Elder or Recognized Expert that could share their expertise on the lesson content.
- Before the Elder or Recognized Expert arrives, please review with all of the students, ways to show respect for the Elder during their visit.
- Work with the local Tribe, school, State Park, National Park or Forest Service to develop appropriate signs for use on a local trail.
- Make Copies of *Trails* from Alexandrovsk No. 2, page 54
- Make Copies of BLM Marking lines for corners.
  - <https://www.blm.gov/cadastral/Manual/73man/id161.htm>
- If using the SimTable, review the [SimTable Prompt](#) for set up

### **Opening:**

The coast line of the Chugach Region is dynamic, and challenging in all weather conditions. The Sugpiaq/Eyak people used to travel by water via the qayaq, anyaq, and dugout canoe. When bad weather stopped water based travel our ancestors used established trails to travel through the challenging terrain. The Sugpiaq/Eyak people would create their own trail markers to help guide their way home or to their next destination. The regional trails were limited by glaciers and challenging terrain.

Trail markers known as “trail blazing”, or *cultural modified trees* (CMT) were used through the region. Traditionally the Sugpiaq would modify trees on a pathway using a stone adz. This marking (modification) would be located at eye level and alternate between the sides of a trail to keep the traveler on the path. The trees are referred to as *Line Trees* or *Sight Trees* used for navigation along a path.

In the article, “Trails” from *Alexandrovsk* pg. 54, you will notice that blazing is mentioned when the Civilian Conservation Corps. (C.C.C) trails were established. Many years before the C.C.C trails were cut into the forests, the Sugpiaq used these trails to travel. The blazing helped guide their way from villages, hunting/fishing sites and to celebrations.

### **Activities:**

#### **Class I: Trails**

1. If available, introduce an Elder or Recognized Expert to share stories about traditional trails used in the area and map the locations on google maps.
2. Read article [“Trails” from Alexandrovsk No. 2 pg. 54](#)
3. The map can be displayed on smart board or individual computers. Look at the topography, elevation, distance and obstacles.

4. OPTIONAL: If using, have students gather around the SimTable to build up the area map that shows the topography, elevation, distance and obstacles of walking.
5. Review locations as described in article and repeat activity for two locations.
6. Have a discussion with the students about whether their community has trails for different uses?
  - a. What are the trails used for? (berries, hunting, trapping, gathering, fishing)
  - b. Are there trails for traveling to other villages or towns?
  - c. If so, have you or someone you know used the trail?
  - d. What is the distance?
  - e. How long did it take?
  - f. Were there markers to make the trail easy to find?
7. Explain to the students that they will be making trail markers from natural or recycled materials for a local or personal trail. Review different trail marker ideas, such as;
  - a. Interpretive Sign with researched information
  - b. Painted Rocks
  - c. Plastic bottle caps nailed to trees to follow
  - d. Painted soup can lids attached to paint sticks or wood stakes
  - e. Flagging tape
  - f. Rock stacking

## **Class II: Trail Games:**

1. Review safety rules for trail games and trail use.
  - a. Take at least one teacher or adult volunteer with each group.
  - b. Stay together as a group while playing games or walking on trails.
  - c. Make sure each group member has a whistle and knows only to blow the whistle for emergencies.
    - **EMPHASIZE:** If someone becomes separated, stay together in one place and blow your whistle until help arrives!
2. Hide and seek: Divide into two groups: Trailblazers and Trackers.
  - a. The Trailblazers lay a trail using a specific trail marking method.
  - b. Once the trail is marked, then the Trailblazers will hide as a group.
  - c. After 15 minutes the Trackers group will set off to follow their trail.
  - d. When the Trackers find the Trailblazers, the groups will switch roles.
    - **NOTE:** This game can be used with various markers and different trails.
3. Treasure Hunt: Lay a trail and hide something special at the end for the Trackers to find.
4. Trail Home: mark your own trail when you go exploring. Then use it to help find your way back.

## **Assessment:**

- Students able to map out local traditional trails and trail locations from the article “*Trails*” and Elder knowledge, on google maps. (and SimTable if used.)
- Students developed two trail markers from natural or recycled materials for a local trail or personal hiking trail.
- Students are able to describe the trail markers and any culturally modified trees (CMT) seen on the hike.

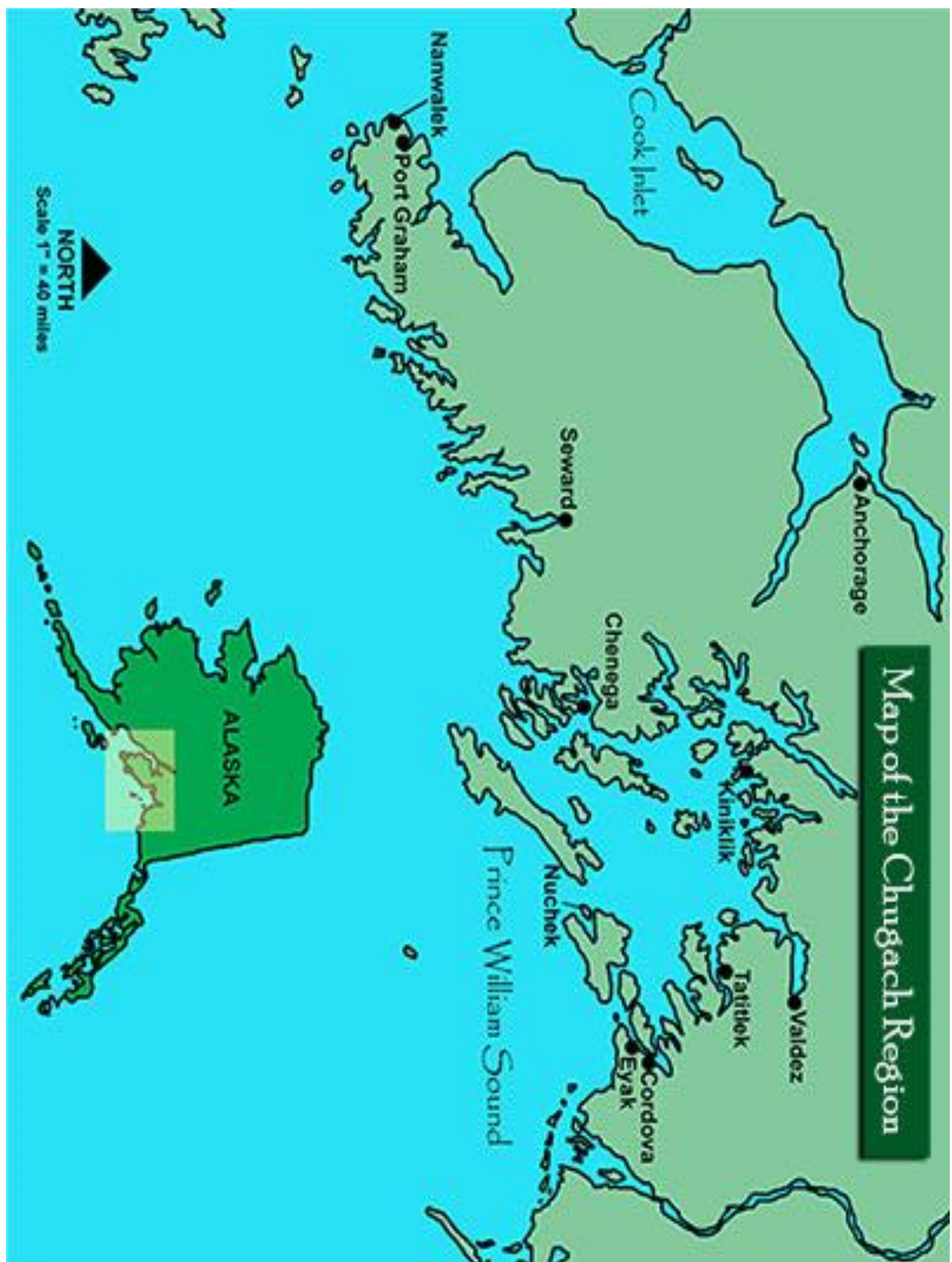


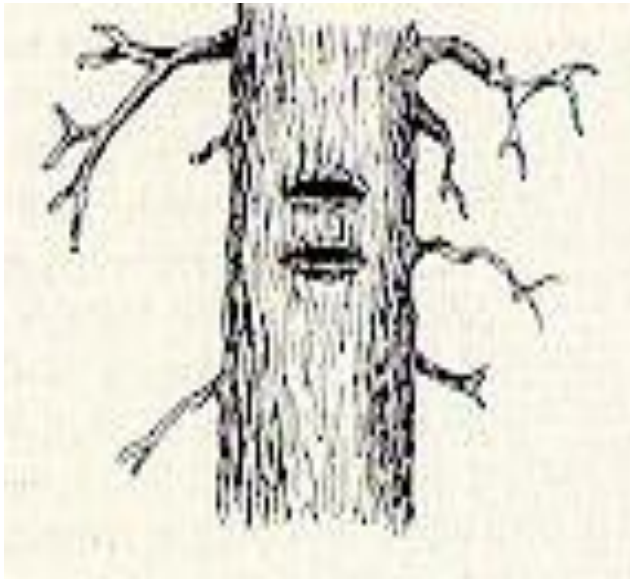
A cultural bearer from the Eyak Culture Camp is examining a culturally modified tree in the forest. Scarred trees were sources for essentials for life such as food, planks, and clothing. Photo courtesy of Heather Hall, USFS





Tree Carving, Juneau Alaska on Mt. Roberts. Eagle





**Figure 61.** - Hack marks on a line tree



**Figure 62.** - A line blaze...

A blaze is a smoothed surface cut upon a tree trunk at about breast height. The bark and a small amount of the live wood tissue are removed with an axe or other cutting tool, leaving a flat surface which forever brands the tree. The size of the blaze depends somewhat upon the size of the tree, but should not be made larger than the surface of the axe blade. A blaze five or six inches in height and from two to four inches in width is usually ample.

A hack is a horizontal notch cut well into the wood, also made at about breast height. Two hacks are cut to distinguish them from other, accidental marks. A vertical section of the finished hack marks resembles a double-V extending across a tree from two to six inches depending upon the diameter of the tree.

The blaze and hack mark are equally permanent, but so different in character that one mark should never be mistaken for the other. The difference becomes important when the line is retraced in later years.

Trees intersected by the line have two hacks or notches cut on each of the sides facing the line, without any other marks whatever. These are called sight trees or line trees. A sufficient number of other trees standing within 50 links of the line, on either side of it, are blazed on two sides quartering toward the line, in order to render the line conspicuous and readily to be traced in either direction. The blazes are made opposite each other coinciding in direction with the line where the trees stand very near it and approaching nearer each other toward the line the farther the line passes from the blazed trees. Figure 63.

The lines should be so well marked as to be readily followed and the blazes plain enough to leave recognizable scars as long as the trees stand. This can be accomplished by blazing just through the bark into the live wood tissue. The blazes should be narrow so that they will heal before decay begins, and special care should be taken not to loosen the cambium layer around the blaze, since this will prevent overgrowth. Where trees have branches growing to the ground, the blazes may be omitted unless it is necessary to remove the branches to permit sighting.





**Figure 63.** - Marking a line through timber.

Lines are also marked by cutting away enough of the undergrowth to facilitate correct sighting of instruments. Where lines cross deep wooded valleys, by sighting over the tops, the usual blazing of trees in the low ground when accessible will be performed. The undergrowth will be especially well cut along all lines within distances of 5 chains of corner monuments and within 2 chains of arteries of travel, but the cutting of the undergrowth may be omitted in deep untraveled ravines unless necessary for accurate sighting or measurement.

Line trees and blazing are marked only with reference to the established true line. Where lines are run by the "random and true" line method, the marking of line trees and the blazing is accomplished by returning over the line after all corrections or adjustments to the final line are definitely known. A sufficient number of temporary stakes should be set along a random line to render it generally unnecessary to rerun the true line instrumentally merely for the purpose of blazing the line through timber. This can usually be accomplished by properly estimating the distance from the temporary stakes, but intersections with line trees will be made with precision, and distances thereto accurately measured.



## SIMTABLE PROMPTS

### **Overview:**

SimTable is a interactive digital sand table (crushed walnut shell- **\*\*see allergy warning below\*\***) that allows users to create and shape 3D projected maps. The SimTable mapping options include Bing satellite imagery, ERSI imagery, USGS topographical maps, and open street maps. Additional maps and mapping services can be searched for by using Chrome browsers and opened on Simtable in a new tab.

**Goals:** The goal of SimTable is to have students interact with maps to enhance their understanding of the local landscape, regional topography/oceanography, map locations, input points, lines and polygons, and run different scenarios.

### **Objective(s):** Students will:

- Learn topography of a specific area.
- Create maps of certain areas within the Chugach Region.
- Develop scenarios that include (watershed, climate change, traditional place names, nomadic movement, wind direction, tidal movement, release flow, etc.)

### **Materials/Resources Needed:**

- SimTable kit
  - Projector and Computer
  - Base and Four sides labeled (1&2 3&4) Photo #2
  - Plastic Base
  - Tripod
  - Four Bags of sand (crushed walnut shell)
- Two Folding Tables (2.5 x 6 feet each)
- Strong WiFi
- Power outlets
- Dedicated space for set up and use

### **Teacher Preparation:**

- Review *SimTable Instructional Manual*
- Review AnyHazard Manual located in SimTable kit
- Set up SimTable (follow Chugachmiut SimTable directions of use)

### **Mapping Resources for SimTable** (Links are set on tabs with in SimTable web browser)

- AnyHazard tools: [apps.simtable.com](https://apps.simtable.com)
- ADFG: [Alaska Freshwater Fish Inventory \(AFFI\)](#)
- NOAA: [Bathymetric and Fishing Maps; Interactive Map Viewer](#)
- Alaska Ocean Observing System: [Gulf of Alaska Data Portal](#)
- SNAP: [Scenariors Network for Alaska and Arctic Planning](#)

*\*If you find additional mapping resources that work with SimTable please record and share with Chugachmiut for continuous improvement.\**

### **Set Up: (pictures below)**

1. Set up two folding tables (a minimum size of 'x6') with electrical outlet close by.
2. Lay out the base of SimTable and locate the four sides
3. On each side, lay out upright sides (1 & 2) (3 & 4)
  - a. Take note on end tabs, these will ahead to the corners of the base.
4. Once the sides are securely in place and upright; layout plastic visqueen from the SimTable materials located in gray tote. \*This step is important as it helps with the clean-up process!
  - a. Flatten plastic and tuck ends under the table. Use binder clips to clip plastic to sides of base.
5. Add the sand (crushed Walnut shell, **see allergy warning below**).
  - a. Pour in one bag at a time slowly. Use the trowels located in the materials box to smooth out the sand and fill the space.

**\*\*Allergy Information: This material is made from crushed walnut shell and could cause an irritation or allergic reactions. Consult with your school nurse to address any students or staff whom may be allergic to nuts and/or walnuts. This is a fine powder and some individuals w/ asthma could have an irritation from the "sand particles"\*\***

6. Installing Projector and Computer:
  - a. Unpack unit from Pelican box, use assistance if needed.
  - b. Remove tripod head and install onto the frame of the projector and computer unit.
  - c. Attach projector to the tripod and secure. You will need to adjust the height based on the table height. Set the tripod to approximately 6' 7" in height.
  - d. Center the unit on one of the long side of the SimTable. (Photo #13)
  - e. Plug in cords to outlet using the power strip. An extension cord is also available, if needed. Two plugs are required.
  - f. Proceed to turn **ON**, both the projector (remote) and Apple mini computer on the tripod stand.
7. Running AnyHazard:
  - a. AnyHazard is the application where you can create, manipulate maps, label and run live scenarios (fire, watershed, rain events, release, wind etc...)
  - b. Single click on AnyHazard logo on side bar. Follow directions centering tripod camera and flatten sand.

### Photos of SimTable Set Up:



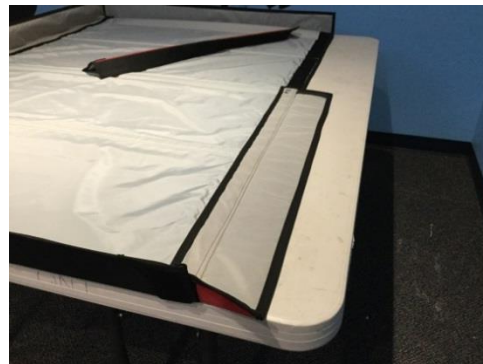
1) Lay out SimTable bottom on tables



2) Match up numbered sides



3) Sides fit together using velcro



4) Attach sides and smooth out



5) Corners wrap around ends



6) Corner wrapped trapping sand



7) Table complete



8) Lay visqueen out flat





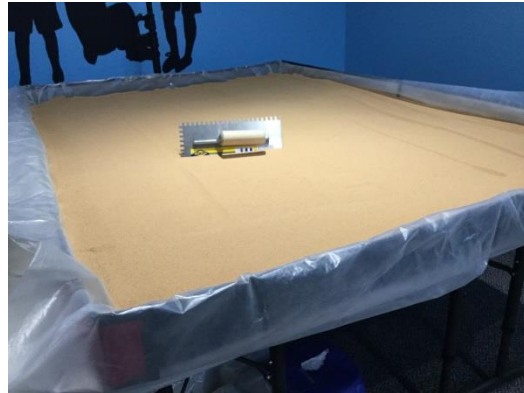
9) Use binder clips to secure to sides



10) Four bags of "sand"



11) Slowly pour bags one at a time on table



12) Smooth with trowel



13) Center Tripod along the long side of table



14) Simtable computer and projector (packed)



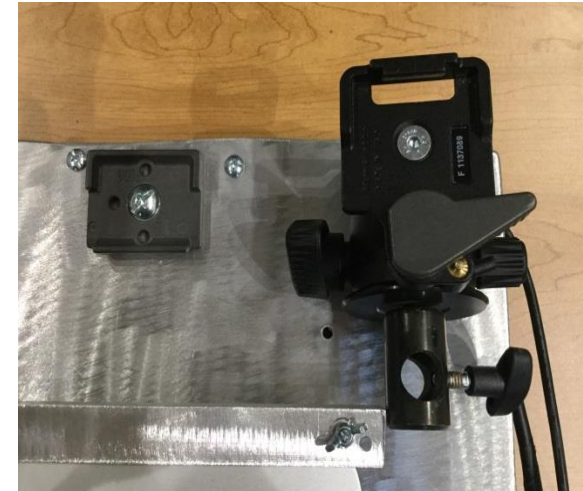
15) Keyboard, mouse, projector remote, pointer



16) Projector and MacMini



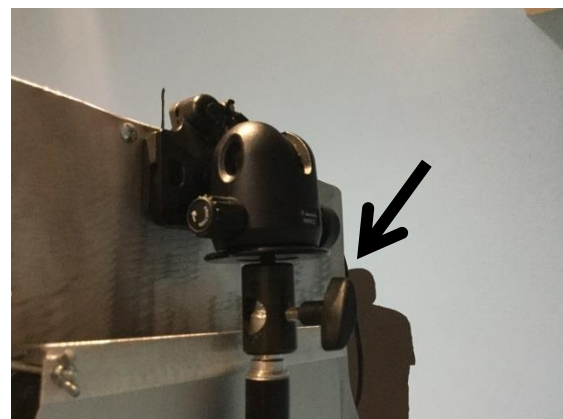
17) Tripod



18) Tripod head to connect to projector base



19) Tripod head connected to projector base making sure the latch locks in place.



20) Place base on top of tripod and secure the tightening screw.

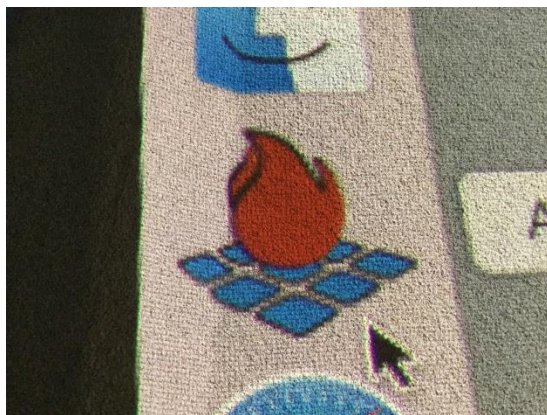




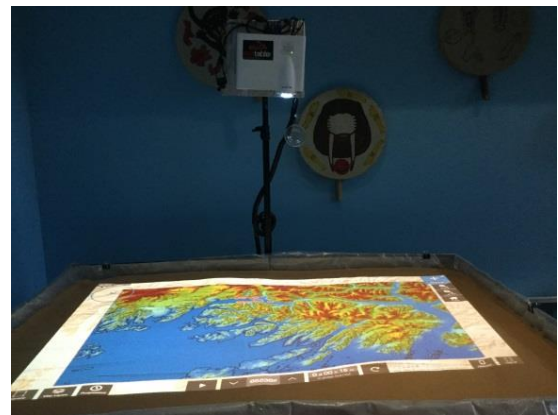
21) Set on tripod, tightened and adjust to proper height for projection.



22) Level the projector with slight adjustments  
This can be challenging we have used packing tape from the projector base to the tripod to assist with leveling.



23) Turn on computer and projector



24) Example of SimTable with slope shading on.

Adjust camera and launch AnyHazard.



25) Window showing map and new map options



23) Cover with visqueen when not in use.



**Clean Up:**

1. Included in the kit are scoops, dust pans and small hand broom to assist with cleaning. Bag the “sand” in provided dry bags up to the fill line. Gather as much sand as possible from the SimTable.
2. Use the Ryobi vacuum to clean remainder of sand from the SimTable base, especially the velcro connections.
3. Clean and carefully fold visqueen and return to gray tote.
4. Use the inventory list to account for all SimTable parts and items before returning.

**Inventory:**

- ☐ Two pad locks and key
- ☐ Pelican case
- ☐ Logitech K520 Wireless key board
- ☐ Logitech M310 Wireless Mouse
- ☐ Laser pointer (Black) Staple brand
- ☐ (1) Laser Pointer (Black) Staples brand
- ☐ Projector Remote
- ☐ Tripod (Large)
- ☐ Projector
- ☐ Mac Mini
- ☐ SimTable base and (4) sides
- ☐ (2) sheets of plastic Visqueen
- ☐ (4) Bags of Crushed Walnut Shell + Four dry bags
- ☐ Plastic Tub (Gray)
- ☐ Any Hazard manual
- ☐ (1) white scoop
- ☐ (2) Black dust pans
- ☐ (2) Mini Broom
- ☐ Ryobi Vacuum w/ 18volt battery / charger
- ☐ (1) Orange Extension cord
- ☐ (1) Trowel
- ☐ (1) Power strip

## SimTable in the Classroom

