

WINTER SCIENCE CREATING AVALANCHES



THE SCIENCE OF AVALANCHES

Name: _____ Date: _____

You watched your “snow” tumble down the plastic tray mountainside. But why did it happen?

Three “ingredients” make up an avalanche. Snow is one of them. An avalanche also needs a sloped surface, or incline. Most avalanches happen on slopes between 25 and 60 degrees. These slopes are gentle enough for snow to rest on top, yet steep enough for it to slide down when disturbed.

As you saw in the experiment, things don't always fall down a slope right away, even if it's steep. An avalanche needs a trigger—something to set it in motion. The trigger in the experiment was the action of hitting the tray. This caused some of the “snow” to break away from the rest and slide down the slope.

On real mountain slopes, avalanche triggers are often natural. They're normal, everyday changes in the environment—things like heavy snowfall, wind, falling trees or rocks, or changes in the weather. Sometimes human activities like skiing, hiking, or driving a snowmobile trigger avalanches. It only takes a little movement to get an avalanche going.

Avalanches are dangerous to people, animals, plants, and objects in their path. All that snow can quickly bury things and block roads. The moving snow may also produce a strong wind that can break apart entire houses. So how do people protect themselves from such a powerful force of nature?

In areas where avalanches are common, fences or other barriers help slow down the snow and change its direction. Sometimes workers at mountain resorts use explosives to trigger safe, planned avalanches. Skiers carry emergency equipment to help them breathe and be found if they're caught in an avalanche. Understanding how avalanches work can help people stay safe and avoid causing one.

THE SCIENCE OF AVALANCHES

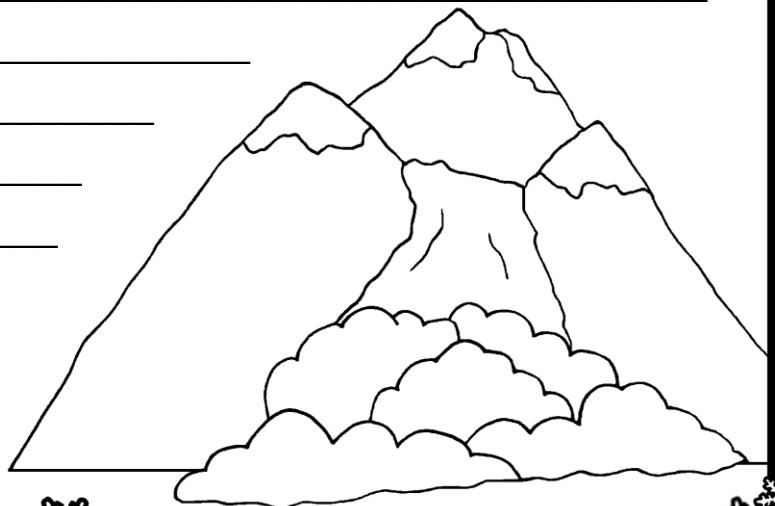
Name: _____ Date: _____

1. What three factors are necessary for an avalanche to occur?

2. What natural events can trigger an avalanche?

3. What human-caused events can trigger an avalanche?

4. How do mountain resorts use explosions to control avalanches?



THE SCIENCE OF AVALANCHES

Name: _____ Date: _____

1. What three factors are necessary for an avalanche to occur?

Snow, a sloped surface, and a trigger are all needed for an avalanche to occur.

2. What natural events can trigger an avalanche?

Wind, weather changes, heavy snowfall, and falling trees or rocks can all trigger an avalanche.

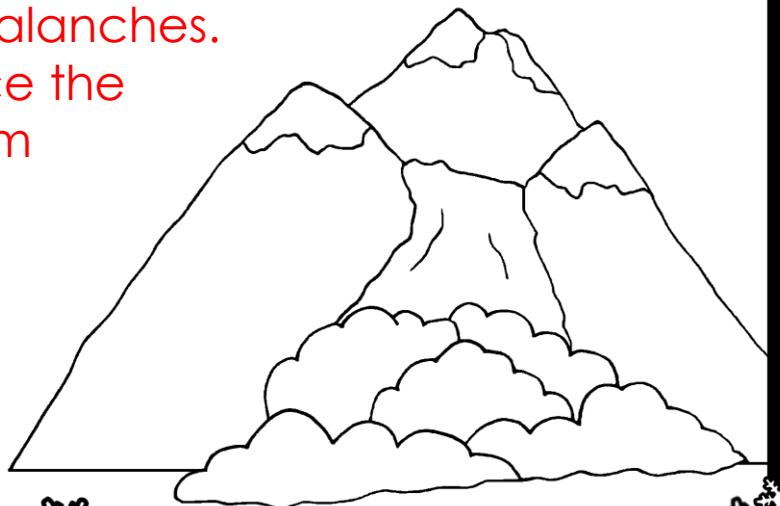
3. What human-caused events can trigger an avalanche?

Snowmobiling, skiing, and hiking can all trigger an avalanche.

4. How do mountain resorts use explosions to control avalanches?

Workers at mountain resorts can use explosives to trigger safe, planned avalanches.

By doing this, they reduce the possibility of dangers from unplanned avalanches.



WANT MORE WINTER RESOURCES?

WINTER MATH ACTIVITIES

5TH GRADE

Winter Treats

Two Truths and a Fib

Building Winter Numbers

Winter Signs

Google Slides Included

WINTER Reading Comprehension

4TH & 5TH GRADE: 11 TEXTS

Snow Day

Snow Day Comprehension

Character Traits

Text Evidence

Digital + Printable

READING COMPREHENSION

WINTER

Winter Reading Comprehension

- Animal Behavior in Winter
- Extreme Winter Weather
- Characteristics of Winter
- Ice Fishing

Snowman World Records

1. What snowman record was set in 2018?

2. How many three-sphered snowmen were built by students at Michigan Tech?

3. How many people dressed like snowmen in Michigan to set a record?

4. How tall was the record-holding snowman?

Digital & Printable

Winter Grammar Review

- ✓ Fragments & Run-ons
- ✓ Homophones
- ✓ Synonyms and Antonyms
- ✓ Context Clues

Winter Signs

Winter Sentences

Google Slides Included

Christmas and Winter Writing Prompts

WRITING PROMPTS, PLANNING PAGES, AND PUBLISHING PAGES

Is it better to give gifts or receive them? Write an opinion.

Pretend you are Christmas shopping with your parents and you get lost in the mall. The mall closes with you still inside. Write about what you do next.

Christmas Prompts

Is it better to give gifts or receive them? Write an opinion piece that clearly supports your opinion.

Google Slides Included

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Thanks!
Jennifer Findley

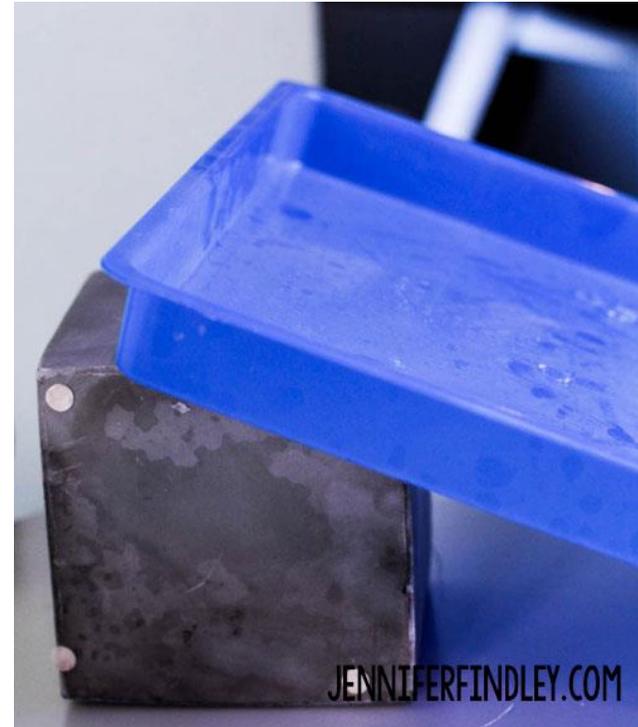


Winter Science : Creating Avalanches

 FLOUR	 SALT	 SUGAR
 CORNMEAL	 PLASTIC TRAY	 FAKE SNOW
 COMPASS	 SOUND SYSTEM	 ROCKS

1

Winter Science : Creating Avalanches



Use the compass to create an incline on the tray between 25 and 60 degrees.

2



Winter Science : Creating Avalanches



Layer the fake snow into snow layers, with the heaviest material on the bottom to represent packed, icy snow and the lighter materials on top to represent freshly fallen snow.

3



Winter Science : Creating Avalanches



Hit the surface of the tray with a rock or block. Watch what happens to the snow. If an avalanche does not occur, adjust the angle of the incline and see if an avalanche is more likely at certain inclines than others.

4



Winter Science : Creating Avalanches



Adding more “snow” may also increase the chances of an avalanche.

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Thanks!
Jennifer Findley

