

Avalanche

Avalanches move down moderately steep slopes at speeds faster than an express train. They can do great damage.

Q1. What is an avalanche made of?



Q2. What triggers an avalanche?



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Q3. The start of an avalanche has been drawn on diagram **1** on the right. Draw in what happens on diagrams **2** and **3**.

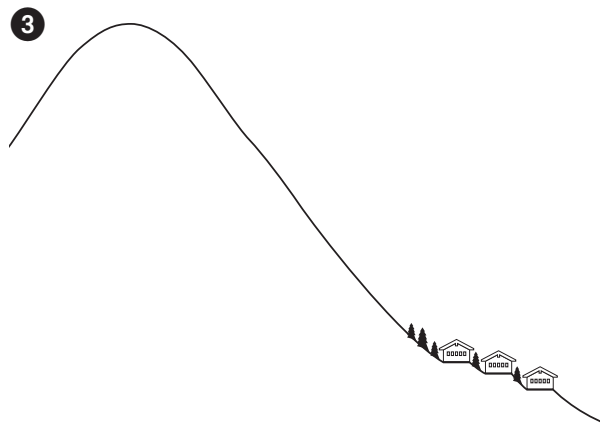
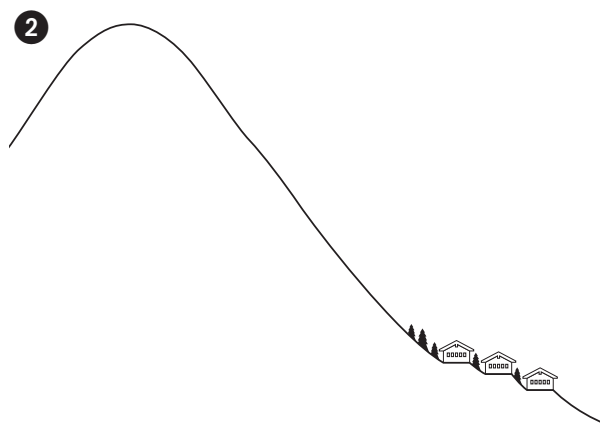
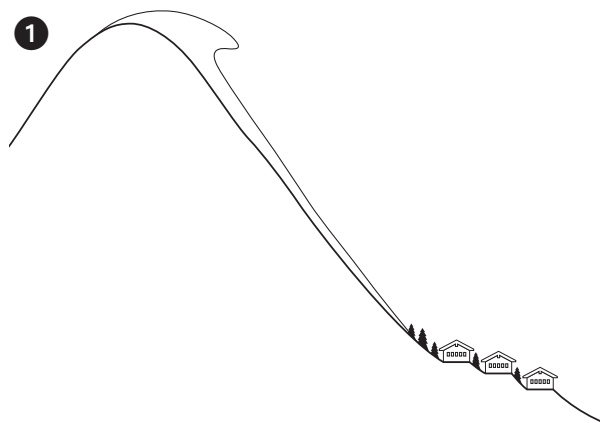
Q4. What happens to the houses?



Q5. What is an avalanche fence?



Q6. Mark on the diagram the place where you would build an avalanche fence.



Answers

1. Snow

2. Any small shock, such as a skier moving over it, and also simple internal melting, or the extra weight of more snow.

3. The snow will slump down and, at the same time, the powdered snow will begin to lift to make a cloud. The shock wave ahead of the snow will damage houses. The main avalanche will completely destroy the houses. Notice that there are three drawings here, as opposed to four in the book. Students will therefore not be able to copy directly.

4. They are destroyed. The force of the snow simply knocks them down.

5. A fence designed to hold snow in place.

6. Any point high up on the slope in the place where avalanches start.

Notes

Avalanches represent the most serious of winter mountain hazards.

There are two aspects to studying avalanches: the way the avalanche happens; and the disaster that is caused if an avalanche hits houses or engulfs people.

The emphasis here should be that a tiny disturbance can have massive knock-on effects. Huge volumes of snow are involved in avalanches. It is the combination of mass of snow and speed that creates the destructive energy.

Snow fences are not needed near the bottom of the slope because, if an avalanche were triggered lower down, it would never gather enough speed to become dangerous.

You may care to read out, or encourage students to read, the book "Avalanche" which is one of the Weather Stories available on the web site ('under In-depth... for projects/Weather Stories') or on the Mountain and Volcano Project CD.