1 Why is it hard to measure wind speed inside a tornado?

2 True or false – wildfires can be a good thing.

3 The eye of a hurricane extends to what height?

4 In which two oceans do most tsunamis occur?

1 Name four things that can trigger a tsunami.

2 What was the fastest tornado wind speed ever measured?

3 How much rain falls in a hurricane?

4 How often do meteor fragments the size of a small car hit Earth?

1 Are wild fires getting worse?

2 True or false – the biggest volcano on Earth is bigger than Mount Everest.

3 True or false – all northern hemisphere tornadoes rotate anti-clockwise.

4 How many earthquakes are there in Britain every year?
1 Tornadoes destroy all the instruments!

2 True! Many ecosystems rely on fires to remove old vegetation and return nutrients to the ground.

3 Often 50,000 ft. Passenger jets fly at around 35,000 ft.

4 The Pacific and Indian Oceans. 

1 Yes. Some start naturally, but humans start most, by accident or on purpose.

2 True. But most of Mauna Loa, in Hawaii, is underwater.

3 False – although most do.

4 200 to 300. But they are usually too small for us to feel.

1 Earthquake, landslide, volcanic eruption, meteor strike.

2 318 mph!

3 Up to 9 trillion litres a day.

4 Several times a year. Most burn up completely in the atmosphere.
1 What kills most people during a tornado?
2 What was the largest magnitude earthquake ever recorded?
3 True or false – wildfires can make trees explode.
4 Lightning heats the air around it – but how hot can it get?

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1 Do hurricanes spin clockwise or anti-clockwise?
2 Kimberlites are a rare kind of volcano. Their magma often contains which precious stone?
3 Can avalanches be controlled?
4 Is a tsunami one giant wave, or a series of giant waves?

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1 What was the biggest volcanic eruption of the 20th century?
2 True or false – tornadoes only happen in the countryside.
3 What happens when volcanic ash mixes with river water?
4 True or false – the first person to name hurricanes named them after politicians he didn’t like!
1 Clockwise in the southern hemisphere, anti-clockwise in the northern hemisphere.

2 Diamonds.

3 Sometimes, if you stop snow from building up. But this is difficult and expensive.

4 A series. The first wave is not always the most destructive.

1 Novarupta, in Alaska, 1912; it was nicknamed “the valley of ten thousand smokes”.

2 False!

3 A lahar forms – a kind of mudflow, travelling downslope. They are extremely dangerous.

4 True! Official naming started a few years later.

1 20 to 30 miles wide.

2 A hard slab of snow that slides downslope the way a dinner plate slides off a table. They are the most deadly kind of avalanche.

3 An asteroid impact devastated an area larger than Greater London.

4 Get underground. If you’re driving, get out of your car.

1 Flying debris

2 Magnitude 9.5, in Chile, 1960.

3 True! Water inside trees can turn to steam so fast that the trees explode!

4 Up to about 27,000°C. That’s more than four times hotter than the surface of the sun.
1 How long are tsunami waves?

2 True or false – hurricanes can be stopped if they’re sprayed with silver iodide.

3 What is the scientific name for the formation of tornadoes?

4 What is a flood basalt?

1 What magnitude was the biggest earthquake ever recorded in Britain?

2 What are hurricane hunters?

3 True or false – volcanoes release poisonous gases.

4 True or false – there are over 100 tornadoes in Britain every year.

1 What time of day do most tornadoes happen?

2 When the asteroid that killed the dinosaurs hit Earth, how fast was it going?

3 Hurricanes form over warm water – but how warm?

4 How hot can wildfires get?

1 How fast are hurricane winds?

2 What four clues suggest a tornado is nearby?

3 In tsunami waves, is just the surface water moving, or is the deeper water moving too?

4 In 1883 when Krakatau volcano (Indonesia) erupted, 36,000 people died. What killed them?
1 Magnitude 6.1, but it happened offshore.

2 Scientific planes that fly around and through hurricanes.

3 True. The main poisonous gases are sulfur dioxide, chlorine, fluorine, and carbon dioxide.

4 True! But most are so weak, no-one notices them. (10)

1 Up to 60 miles.

2 False. This was tried in the 1970s – it didn’t work.

3 Tornadogenesis. There are many scientists studying this!

4 A lava flood covering an area several times the size of Wales. Humans haven’t seen one of these huge eruptions – yet! (9)

1 74 mph to over 155 mph.

2 Dark, greenish sky; very low, rotating cloud (called wall cloud); large hailstones; a loud roar, like a freight train.

3 The deep water too.

4 Tsunamis triggered by the exploding volcano. (12)

1 In the afternoon and evening.

2 About 12 miles per second – that’s about 20 times faster than a speeding bullet.

3 Water must be over 26°C.

4 The hottest part (the air just in front of a wildfire) can reach 800°C. (11)
1 True or false – when tsunamis hit land, they can travel up rivers.

2 What do you do if you’re caught in a wildfire while hiking?

3 What’s the difference between a hurricane, a cyclone, and a typhoon?

4 What is the most violent atmospheric storm?

1 What hazard causes a storm surge?

2 Why are boats at sea safe from tsunamis?

3 Does lightning strike the same place twice?

4 True or false – earthquakes deeper than about 400 miles don’t happen.

1 True or false – tornadoes only live for a few minutes.

2 How do you avoid being struck by lightning?

3 Are there volcanoes on the Moon?

4 When is the Atlantic hurricane season?

1 What is an “outbreak” of tornadoes?

2 True or false – earthquakes can be predicted.

3 What three things are needed to start a fire?

4 What happens when lava runs into the sea?
1 Hurricane. Strong wind pushes the sea up onto land, causing flooding.

2 In open ocean, tsunamis are often less than 30 cm high. They only rise up near land.

3 Yes! It’s attracted to tall or high objects, like trees or TV aerials. Skyscrapers are often struck several times in one storm.

4 True.

1 True.

2 Clear an area of fuel (vegetation), lie down, and cover yourself with something unlikely to burn.

3 Location. They are local names for tropical cyclones.

4 Tornado.

1 When many tornadoes form from one thunderstorm.

2 False. We know where they are most likely to happen, but not when.

3 Fuel (such as grass or wood), oxygen, and heat.

4 Lava haze, called laze, is produced. It’s a cloud of hydrochloric acid.

1 True. Most last less than 10 minutes; only the very biggest last for more than an hour.

2 Shelter in enclosed buildings or inside cars (don’t touch the metal). Don’t stand under a tree! In the open, crouch low, but don’t touch the ground except with your feet.

3 Yes, but we don’t think they are active any more.

4 June to November
1 True or false – earthquakes happen on the moon.

2 Which Disney™ film was used to campaign for wildfire awareness?

3 Where are tornadoes most common?

4 How fast do tsunami waves travel?

1 True or false – avalanches can be triggered by loud noise.

2 Do earthquakes make noise?

3 Why is volcanic ash bad for aeroplanes?

4 How long do hurricanes live?

1 True or false – tsunamis slow down before they hit land.

2 How many earthquakes happen each year?

3 Is the atmospheric pressure in a hurricane unusually low or unusually high?

4 What do you do if you’re caught in an avalanche?

1 How fast do tornadoes move forward?

2 True or false – just before a tsunami hits, the sea retreats, leaving the beach exposed.

3 Which is worse – a Category 1 hurricane, or a Category 5 hurricane?

4 What volcanic rock can float on water?
1 False! Unless it’s extremely loud, like explosive going off at close range.

2 No, but they make buildings shake, and that is noisy.

3 It melts and sticks to the parts inside the jet engine, causing engine failure.

4 Up to 3 weeks. (18)

1 True, but they’re called moonquakes. They are smaller and less common than on Earth.

2 Bambi ™.

3 In a part of the US called Tornado Alley; they have an average of 800 per year.

4 Up to 500 mph – the same as a passenger jet. (17)

1 30 mph on average. The slowest hardly move at all, the fastest can reach 70 mph.

2 Often true. But sometimes the sea rises suddenly instead.

3 Category 5. Categories are based on wind speeds.

4 Pumice. It’s foamy lava, so it’s mostly bubbles. (20)

1 True. But they are still fast, up to 100 mph.

2 About half a million are detected, but four-fifths are too small to be felt by humans.

3 Unusually low

4 “Swim” upward as hard as you can before the snow settles; as the avalanche slows down, clear breathing space, then punch upward through the snow.
1 True or false – wildfires didn’t happen until about 400 million years ago.

2 What is the biggest volcano ever discovered?

3 True or false – men are four times more likely to be struck by lightning than women.

4 How are tornadoes detected?

1 True or false – volcanic eruptions can send ash over 17 miles up into the atmosphere.

2 How fast can avalanches move?

3 What is a supercell thunderstorm?

4 What was the worst hurricane disaster?

1 How wide are hurricanes?

2 How high are tsunamis when they hit land?

3 What is “earthquake weather”?  

4 True or false – volcanoes can explode sideways as well as upwards.

1 What was the deadliest earthquake ever?

2 Do all tropical storms grow into hurricanes?

3 When will the Yellowstone supervolcano erupt again?

4 How do you survive a tsunami?
1 True.

2 Up to 80 mph.

3 An storm organized around a rotating column of air. They produce tornadoes.

4 Bangladesh, 1970. Storm surges killed over half a million people.

(22)

1 True! Fires need oxygen, and Earth’s atmosphere didn’t have enough.

2 Olympus Mons, on the planet Mars.

3 True! It’s because men are often outdoors holding metal objects like golf clubs or umbrellas.

4 A special kind of radar (Pulse-Doppler) can detect them just before they form.

(23)

1 China, in 1556. It killed about 830,000 people.

2 No, only about half do.

3 No-one knows! But it is being carefully watched, so there’ll be plenty of warning.

4 Find high ground or a high building. Remember more waves could be coming, so stay high until you’re told it’s safe.

(24)

1 Often over 400 miles wide.

2 Most are less than 10 ft (single-decker buses are about 10 ft).

3 A myth! Weather is not linked to earthquakes.

4 True. It’s called a lateral or directed blast.