

# Explore Monsoons!

## phenomenal science

Every summer, a dramatic storm rolls across **India** from the west and dumps gallons of water between **southern Asia** and the **Indian Ocean**. These massive rain storms never seem to end! They can last for up to five months, before disappearing. People and wildlife rely on these **seasonal monsoons**. The storms help water crops and replenish rivers. If a monsoon strikes too early in the summer, dangerous floods can wipe out whole settlements. But if a monsoon happens too late (or not at all), the lack of water causes draughts and famine, leaving a lot of thirsty plants and hungry people.

**Monsoons** are winds caused by the earth's rotation in respect to the sun, not the rainstorms themselves. These giant wind circulations occur worldwide. **Africa, Mexico, Australia**, and even the **southwest United States** all have their own monsoon seasons. The winds originate from a temperature difference between the sea and the land. When the sun shines down on our planet, it heats up the land and the air above the ground. However, the ocean absorbs the sun's heat, warming its waters and leaving the air just above the water's surface much cooler.

When the warm air on land rises up into the atmosphere (called **convection**), the cold oceanic air rushes towards the gap left by the warm air. *This reaction creates a **wind circulation***. Sometimes, the reverse will happen. Land air will become much cooler than ocean air, and then rush backwards to fill the gap left by rising, warmer ocean air. This sudden reverse happens from season to season, and is what causes monsoons.

During India's monsoon, warm, moist air pushed by a **jet stream** (*high speed winds that move around the earth at high altitudes and influence weather patterns*) will jump massive bordering mountains called the **Himalayas** and rain down on the country. Certain parts of **India**, like the town of **Cherrapunji**, can receive as much as *1,042 inches of rain in a single year!*

A lot of people depend on these rains for their livelihood. Rains of seasonal monsoons normally transform arid (*dry*) areas into grasslands. If a monsoon fails, the lack of rain can dry up the land and cause famines, droughts, and loss of life.

## Monsoon Seasons

- 1 **Subsaharan Africa**  
February - October
- 2 **Mexico & Southwest US**  
June - September
- 3 **East Asia**  
May - August
- 4 **South Asia**  
Summer: May - September  
Winter: December - February
- 5 **Australia**  
September - February

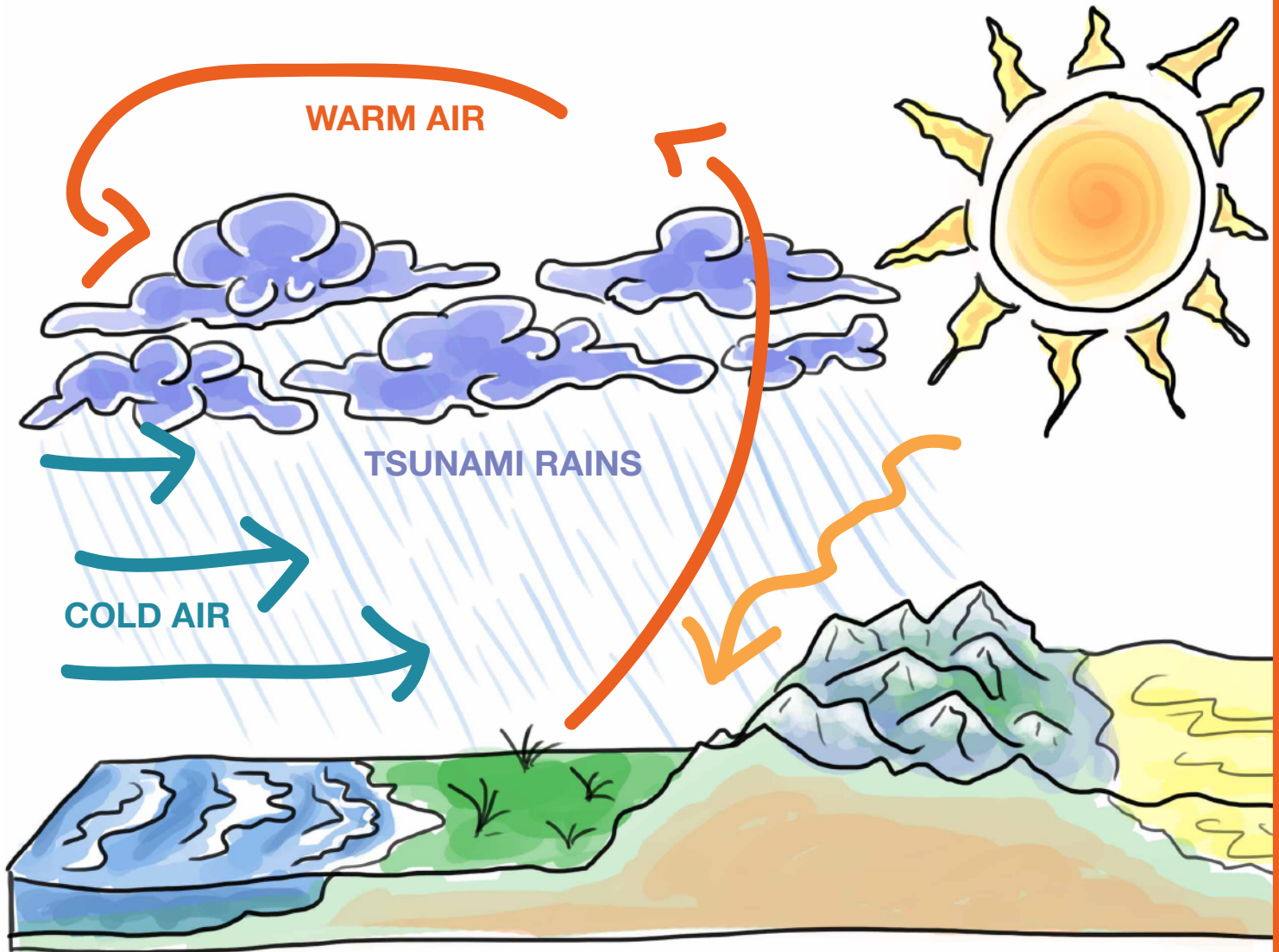
## Safety Tips

- 1 Keep an emergency radio and flashlight.
- 2 Invest in bottled water and canned food.
- 3 Plan a safety procedure with your family, in case of floods.
- 4 Keep a first aid kit at hand.
- 5 Prepare for possible power outages.
- 6 Research ways to secure and prepare your home.
- 7 If you are outside, stay away from power lines.

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SUN HEATS UP LAND AND OCEAN



**After reading the article on monsoons, please answer the following questions:**

What are a few tips to stay safe during a monsoon? \_\_\_\_\_

What is a monsoon, and where can you find them? \_\_\_\_\_

Why are monsoons important? \_\_\_\_\_