Forecasts and Futures

Compare climate forecasts and their effects on people

GHW.12.1 "Analyze global climate change forecasts for different parts of Earth and the implications of these changes for humans."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline three forecast changes in different places, circle one human impact linked to each change, and draw an arrow from each change to its impact.

Different Places, Different Risks

1 Climate forecasts describe possible futures, not tomorrow's weather. Scientists compare models of the climate under different greenhouse gas emissions. By late this century, the Arctic is expected to warm faster than the global average, especially if emissions remain high. Longer ice-free seasons may open shipping routes, but thawing ground can crack roads and buildings in northern communities. Less sea ice also reduces hunting habitat for animals that some Indigenous peoples depend on. A forecast of easier shipping does not erase the costs of damaged homes or disrupted food sources. Cutting emissions can limit, though not prevent, further warming.

2 Around the Mediterranean, forecasts point to hotter summers and, in many areas, less summer rain. Under higher emissions, more intense heat and drying can increase water shortages and wildfire risk. Farmers may need crops that use less water, while cities may have to protect outdoor workers during heat waves. In South Asia, forecasts also show rising heat, but rainfall presents a different challenge: a warmer atmosphere can fuel heavier downpours even where the timing of monsoon rain remains uncertain. A single season may bring both dangerous floods and periods without enough water. Water storage and flood warnings address different parts of that risk.

3 Low-lying coastal communities face another forecast: rising seas as warmer water expands and land ice melts. Even a modest rise makes storm flooding more damaging because waves start from a higher level. Salt water can enter wells and farmland, threatening drinking water and crops. The size and speed of future sea-level rise depend partly on emissions, but some rise will continue for centuries because oceans and ice sheets respond slowly. A town might raise roads and protect wells, while also considering moves away from the most exposed shore. Unlike a short heat wave, this risk can reshape where people live for generations.

2 ANSWER WITH EVIDENCE

Use the passage

1. How could the Arctic forecast create both an opportunity and a hardship for people there?

2. How do the rainfall forecasts for the Mediterranean and South Asia differ, and what human risk does each create?

3. Why might a coastal town need both to protect wells now and to consider moving away from the shore later?

4. How could cutting emissions change the Arctic and Mediterranean forecasts, and what risks would remain?

3 YOUR TURN

Your own words

A council serves a low-lying coastal town and an inland Mediterranean farming town but can fund only one first project: protect coastal wells or create heat shelters for farmworkers. In 5 to 6 sentences, choose a first project, connect a forecast to a human impact in each town, and propose a later step for the other town.

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PART 1 · READ AND MARK

Underline three forecast changes in different places, circle one human impact linked to each change, and draw an arrow from each change to its impact. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How could the Arctic forecast create both an opportunity and a hardship for people there?	**Longer ice-free seasons may open shipping routes, but thawing ground can damage roads and buildings, and reduced sea ice can disrupt food sources.**
2	How do the rainfall forecasts for the Mediterranean and South Asia differ, and what human risk does each create?	**Many Mediterranean areas may have less summer rain, increasing water shortages. South Asia may have heavier downpours despite uncertain monsoon timing, creating flood risk alongside periods of water shortage.**
3	Why might a coastal town need both to protect wells now and to consider moving away from the shore later?	**Rising seas can push salt water into wells, while sea-level rise will continue for centuries and may make the most exposed shore difficult to live on.**
4	How could cutting emissions change the Arctic and Mediterranean forecasts, and what risks would remain?	**Cutting emissions can limit warming, so Arctic warming and Mediterranean heat and drying may be less severe than under higher emissions. It would not prevent all warming or remove those risks.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would fund protection for coastal wells first because rising seas can push salt water into drinking water. Storm flooding could also become more damaging as seas rise. The inland farming town faces hotter summers, which put outdoor workers at risk during heat waves. It may also face water shortages as summers become drier. I would fund heat shelters for farmworkers next. My choice puts drinking water first, but both towns need plans.

Accept either first-project choice if the response accurately links a forecast to a human impact in each town and gives a later step for the other town. Students should treat forecasts as risks, not guaranteed outcomes.