What Drives Spread?

Sort the forces behind disease spread.

GHW.9.3 "Distinguish and assess the human and physical factors associated with the spread of selected epidemics and/or pandemics over time, and propose strategies for limiting the spread of diseases."

NAME _____ DATE _____

HUMAN FACTOR

A human factor is something people do or build that affects how a disease spreads. It can involve travel, shared spaces, or health decisions.

A clinic reuses needles, passing hepatitis B between patients.

PHYSICAL FACTOR

A physical factor is a natural condition or process that affects how a disease spreads. It can involve weather, land, water, or wildlife habitats.

A network of caves gives virus-carrying bats a route between distant habitats.

1 SORT

8 items

Circle HUMAN or PHYSICAL for each item, then choose two items for Part 2 and explain what clue helped you sort each one.

1. Travelers carry influenza between cities on international flights. **HUMAN** **PHYSICAL**

2. Dust storms carry spores that cause valley fever into nearby towns. **HUMAN** **PHYSICAL**

3. Mild winters let more ticks that carry Lyme disease survive until spring. **HUMAN** **PHYSICAL**

4. A town delays repairing its sewage system, allowing cholera bacteria into drinking water. **HUMAN** **PHYSICAL**

5. A public festival brings people with and without measles into close contact. **HUMAN** **PHYSICAL**

6. People skip isolation after a positive measles test, exposing others. **HUMAN** **PHYSICAL**

7. A river flood expands natural wetlands where malaria-carrying mosquitoes breed. **HUMAN** **PHYSICAL**

8. A mountain pass lets infected wild animals move into another valley. **HUMAN** **PHYSICAL**

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write one new HUMAN example and one new PHYSICAL example of a factor that can spread disease.

HUMAN _____

PHYSICAL _____

CHALLENGE

Choose one HUMAN item and one PHYSICAL item from Part 1. In two sentences, explain how each affects disease spread and propose a way to limit the spread linked to one of them.

What Drives Spread?

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Travelers carry influenza between cities on international flights.	**HUMAN**	Air travel moves infected people between cities.
2	Dust storms carry spores that cause valley fever into nearby towns.	**PHYSICAL**	Wind moves infectious spores through the environment.
3	Mild winters let more ticks that carry Lyme disease survive until spring.	**PHYSICAL**	Seasonal weather affects tick survival.
4	A town delays repairing its sewage system, allowing cholera bacteria into drinking water.	**HUMAN**	A decision about infrastructure allows water contamination.
5	A public festival brings people with and without measles into close contact.	**HUMAN**	A gathering creates opportunities for person-to-person transmission.
6	People skip isolation after a positive measles test, exposing others.	**HUMAN**	A health decision increases exposure.
7	A river flood expands natural wetlands where malaria-carrying mosquitoes breed.	**PHYSICAL**	Flooding creates more breeding habitat for mosquitoes.
8	A mountain pass lets infected wild animals move into another valley.	**PHYSICAL**	A natural landform provides a route for infected animals.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **HUMAN**: A crowded ferry lets a respiratory virus pass between passengers.
- **PHYSICAL**: Heavy rain fills natural ponds where disease-carrying mosquitoes breed.

Challenge: Item 1 is a human factor because flights move infected travelers, while item 2 is a physical factor because dust storms move infectious spores. To limit the spread linked to item 1, travelers with influenza symptoms could postpone their flights.

For Part 2, look for explanations that identify a human action or system versus a natural condition or process. Accept new examples when they clearly show how the factor could affect disease spread.