# Weather Hazard Solutions

Grade 3

Name _____ Date _____

**Remember:** Engineers **design solutions** to reduce damage from weather hazards: **levees** and **sandbags** for floods, **shutters** for wind, **lightning rods** for lightning.

**Engineer's steps:** find the problem → design a solution → test it → make it better.

## Designing for Safety



We can't stop severe weather, but engineers can **design solutions** that reduce the damage it causes.

**Floods** happen when heavy rain or melting snow makes rivers overflow. People build **levees**, which are walls of earth along rivers, and they stack **sandbags** to hold water back. Some houses near water are built on stilts.

**Strong winds** from hurricanes and tornadoes can break windows and blow away roofs. **Storm shutters** cover windows, and metal straps hold roofs tightly to walls. Many towns have **warning sirens**.

**Lightning** can start fires. A **lightning rod** on top of a tall building gives lightning a safe path into the ground. Engineers test their designs, then improve them to make them even better.

## 1. Check your understanding

Circle the best answer.

**1. What do engineers do about severe weather?**

(a) Stop it from happening (b) Design ways to reduce damage (c) Ignore it

**2. What is a levee?**

(a) A wall of earth along a river (b) A kind of window (c) A storm cloud

**3. How do storm shutters help?**

(a) They make rain. (b) They stop floods. (c) They protect windows from wind.

**4. What does a lightning rod do?**

(a) Gives lightning a safe path down (b) Makes lightning (c) Stops rain

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## 2. Which hazard does it protect against?

Circle the hazard each design protects against.

| | | | | |
|---|---|---|---|---|
| 1 | sandbags | flood | strong wind | lightning |
| 2 | storm shutters | flood | strong wind | lightning |
| 3 | lightning rod | flood | strong wind | lightning |
| 4 | houses on stilts | flood | strong wind | lightning |
| 5 | roof straps | flood | strong wind | lightning |
| 6 | a levee | flood | strong wind | lightning |

## 3. Think like a scientist

Answer in a complete sentence.

1. **Design one idea to protect a school playground from flooding. Explain how it works.**

# Answer Key

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## 1. Check your understanding

**1. What do engineers do about severe weather?**

(a) Stop it from happening (b) **Design ways to reduce damage** (c) Ignore it

**2. What is a levee?**

(a) **A wall of earth along a river** (b) A kind of window (c) A storm cloud

**3. How do storm shutters help?**

(a) They make rain. (b) They stop floods. (c) **They protect windows from wind.**

**4. What does a lightning rod do?**

(a) **Gives lightning a safe path down** (b) Makes lightning (c) Stops rain

## 2. Which hazard does it protect against?

| | | flood | strong wind | lightning |
|---|---|---|---|---|
| 1 | sandbags | ● | | |
| 2 | storm shutters | | ● | |
| 3 | lightning rod | | | ● |
| 4 | houses on stilts | ● | | |
| 5 | roof straps | | ● | |
| 6 | a levee | ● | | |

## 3. Think like a scientist

Sample answer.

1. **Design one idea to protect a school playground from flooding. Explain how it works.**
   Build a small raised wall around the playground and add drains, so rainwater flows away instead of collecting.