



# Why Materials Matter

Week 2 — Friday | Material Investigation



## Choosing the Right Material

Have you ever wondered why your raincoat is made of plastic instead of cotton? Or why your spoon is made of metal instead of paper? The answer is that different materials have different properties, and we choose materials based on what we need them to do.

Engineers think carefully about which materials to use when they design things. A bridge needs to be strong, so it's made of steel and concrete. A window needs to be transparent, so it's made of glass. A bicycle tire needs to be flexible, so it's made of rubber.

Sometimes one material isn't enough, so engineers combine materials. A pencil has wood, graphite, and metal all working together. A smartphone has glass, metal, plastic, and many other materials inside it.

Choosing the right material can also help protect the environment. Using recycled materials reduces waste. Some materials last longer than others, so they don't need to be replaced as often.



## Reading Questions

**1. Why is a raincoat made of plastic instead of cotton?**

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**2. Name two materials used to build a bridge and why they are used.**

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**3. Why do engineers sometimes combine different materials?**

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**4. Think about a product you use every day. What materials is it made of and why were those materials chosen? Explain your thinking.**

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## Best Material for the Job

Write the best material for each item and explain why.

| Item         | Best Material | Why?  |
|--------------|---------------|-------|
| Window       | _____         | _____ |
| Bed Sheet    | _____         | _____ |
| Bicycle Tire | _____         | _____ |
| Hammer Head  | _____         | _____ |
| Basket       | _____         | _____ |

## True or False

|                                                                     |              |
|---------------------------------------------------------------------|--------------|
| A raincoat should be made of a waterproof material.                 | True / False |
| Windows are made of glass because it is transparent.                | True / False |
| All materials are good for every job.                               | True / False |
| Engineers only use one material at a time.                          | True / False |
| Using recycled materials helps the environment.                     | True / False |
| Rubber is a good material for bicycle tires because it is flexible. | True / False |

## Design an Invention

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**Design something new! Draw it below and label the materials you would use.**

**My invention is called:** \_\_\_\_\_

**Materials I used and why:**

## Science Journal

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**This week I learned about:**

**My favorite activity was:**

**Something I still wonder about:**

## Week 2 Review

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**Name 5 material properties we learned about this week:**

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_

4. \_\_\_\_\_ 5. \_\_\_\_\_