

## 24.10: Thinking about the material

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### 24.10.1: Reflect and research

1. How did Michelson and Morley demonstrate that the ether does not exist?
2. Why is 1905 the “year of physics”?
3. Give an example of a device that you use that is affected by relativistic effects.
4. How do you resolve the twin paradox? Can you show it on a space-time diagram?
5. What did Lorentz do and when?
6. Apart from the space-time interval,  $s$ , what else is Lorentz invariant?
7. What is Cherenkov radiation?

### 24.10.2: To try at home

1. Build a particle accelerator.
2. Look up a video illustrating the barn paradox, and other relativistic effects.

### 24.10.3: To try in the lab

1. Propose an experiment to measure the speed of light.
2. Propose an experiment to test relativistic effects with electro magnetism.

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