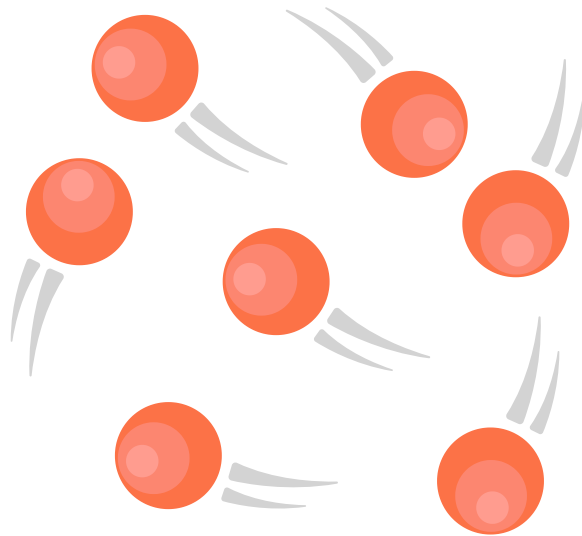


TEKS Grade 7 - S.7.8.C

Temperature and Kinetic Energy of Particles

- ✓ 7th Grade Science TEKS Curriculum Bundle
- ✓ Variety of Lesson and Activity Types
- ✓ Digital + Printable Formats



Teach With
Fergy

NEW 2024

Resources Included

- ✓ **Complete S.7.8.C - 7th Grade Science TEKS Curriculum.**
- ✓ **Variety of Lesson Types** - Includes lessons, activities, assessments, and more.
- ✓ **Daily Teaching Timeline Included** - Includes a ready-to-go, daily teaching timeline.
- ✓ **Digital + Printable Formats** - Ideal for classroom, hybrid, or remote learning environments with flexible access options.

Daily Teaching Timeline Included

TEKS – Grade 7

5.7.8 Force, motion, and energy. The student understands the behavior of thermal energy as it flows into and out of the systems.

5.7.8.C - The student is expected to explain the relationship between temperature and the kinetic energy of the particles within a substance.

Resources:

- *When Kinetic Energy Changes - Energy Transfers – Lesson*
- *How Does Mass Affect Temperature Change – Activity*
- *Heat by Friction - Activity*

TEKS Science Daily Teaching Plan

Lesson Length: 55 minutes

Timeframe: 3 Days

Day	Lesson/Activity
Day 1	When Kinetic Energy Changes - Energy Transfers – Lesson
Day 2	How Does Mass Affect Temperature Change – Activity
Day 3	Heat by Friction - Activity

When Kinetic Energy Changes Lesson 6th, 7th, 8th Grade

- ✓ **Comprehensive Content Overview** – Covers how changes in motion cause energy transfer and temperature changes.
- ✓ **Student-Friendly Format** – Clear visuals and comparisons support understanding of complex concepts.



Hot vs. Cold – How Does Mass Affect Temperature Change?

Objective:

Students will investigate how the mass of a substance (water) affects how much its temperature changes when heat is added.

Materials:

- Hot water (same temperature for all samples)
- 2 containers of water: one with 100 mL, one with 200 mL
- Thermometers
- Timer

Steps:

1. Initial Temperature:
 - Measure and record the starting temperature of both water samples.
 - Example: Both are at 25°C.
2. Add Heat:
 - Place both containers under a heat lamp or near a safe heat source for 5 minutes.
3. Measure Final Temperature:
 - Record the final temperatures.
 - Example Data:

Water Volume (mL)	Starting Temp (°C)	Final Temp (°C)

4. Analyze the Data:
 - Smaller masses heat up faster.
 - Heat energy causes particles to move faster (higher average kinetic energy = higher temperature).

Questions:

1. Which sample heated up more?
2. Why did the smaller sample heat faster?
3. What does this show about mass and energy transfer?

Heat by Friction

Objective:

Show how rubbing two objects transfers energy and increases temperature by increasing kinetic energy.

Materials:

- Two wooden blocks (or wooden rulers)
- Thermometer (optional)
- Stopwatch
- Notebook

Instructions:

1. Rub the two wooden blocks together for 1 minute.
2. Touch the surface and describe how it feels (or use a thermometer to measure temperature).
3. Try the same test with different materials (cloth, plastic, metal).
4. Record which material created the most heat.
5. Write an argument about how kinetic energy from motion is transferred as thermal energy (heat).

Activity Questions:

1. What did you feel after rubbing the surfaces together?
2. What type of energy was used to create that warmth?
3. Which material created the most heat? Why do you think that happened?
4. How does this show the transfer of energy?

Who is this Bundle for?

- **Teachers who teach 7th grade science in Texas**
- **Teachers who want multiple resources at their fingertips including lessons and a variety of activities, in order to prepare their students for the STAAR Science Exam**
- **Teachers who don't have time to develop their own resources or organize what to teach and when**

