

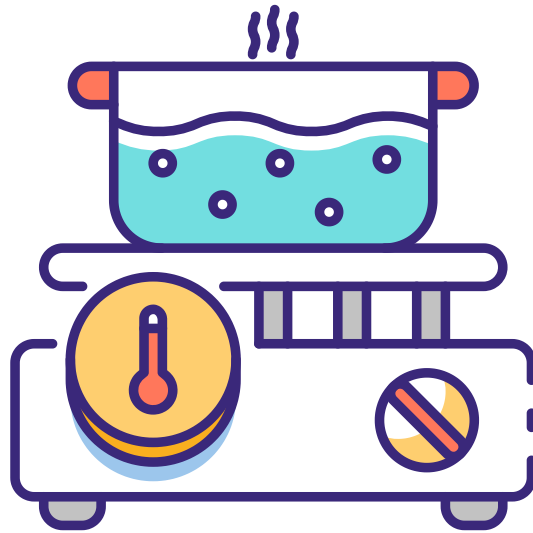
TEKS Grade 7 - S.7.8 Bundle

FORCE, MOTION, AND THERMAL ENERGY FLOW

✓ 7th Grade Science TEKS Curriculum Bundle - S.7.8.A, S.7.8.B, S.7.8.C

✓ Variety of Lesson and Activity Types

✓ Digital + Printable Formats



NEW 2024

Resources Included

- ✓ **Complete S.7.8 - 7th Grade Science TEKS Curriculum** | Force, Motion, and Thermal Energy Flow.
- ✓ **Variety of Resource 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.

Resources Included

TEKS Grade 7 - S.7.8.A Thermal Energy Transfer

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



NEW 2024

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



NEW 2024

TEKS Grade 7 - S.7.8.B Thermal Energy Change Reactions

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



NEW 2024

Daily Teaching Timeline Included for Each Standard

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.A - The student is expected to investigate methods of thermal energy transfer into and out of systems, including conduction, convection, and radiation.

Resources:

- *Thermal Energy, Temperature, and Heat Transfer – Lesson*
- *The Insulator – Thermal Insulator Challenge*

TEKS Science Daily Teaching Plan

Lesson Length: 55 minutes

Timeframe: 5 Days

Day	Lesson/Activity
Day 1	Thermal Energy, Temperature, and Heat Transfer – Lesson
Day 2	The Insulator – Thermal Insulator Challenge
Day 3	The Insulator – Thermal Insulator Challenge
Day 4	The Insulator – Thermal Insulator Challenge
Day 5	The Insulator – Thermal Insulator Challenge

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.B - The student is expected to investigate how thermal energy moves in a predictable pattern from warmer to cooler until all substances within the system reach thermal equilibrium.

Resources:

- *Thermal Energy Change Reactions Experiments and Demonstrations*
- *How Does the Type of Matter Affect Heat Transfer - Activity*

TEKS Science Daily Teaching Plan

Lesson Length: 55 minutes

Timeframe: 2 Days

Day	Lesson/Activity
Day 1	Thermal Energy Change Reactions Experiments and Demonstrations
Day 2	How Does the Type of Matter Affect Heat Transfer - Activity

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

Lessons, Activities, Assessments, and more

Designing a Thermal Energy Transfer Device Using Chemical Reactions



Teach With A Pencil

- ✓ 4 activities
- ✓ 2 endothermic and 2 exothermic reactions

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.



The Insulator – Thermal Insulator Challenge

- ✓ Classroom Ready - Just Print and Go!
- ✓ Active Engagement - Keep Students' Attention
- ✓ Direct Video Link Included



Includes Word and PDF Versions

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?

Ice Melt Mystery – How Does the Type of Matter Affect Heat Transfer?

Objective:

Students will investigate how different materials affect temperature change when ice melts in each one.

Materials:

- 3 cups of room-temperature substances (same mass): water, cooking oil, rubbing alcohol
- Ice cubes (same size)
- Thermometers
- Timer

Steps:

1. Set the Stage:
 - Each cup contains 100 mL of a different liquid at the same temperature.
 - Place an equal-sized ice cube in each.
2. Monitor Melting:
 - Record temperature every minute for 10 minutes.

Liquid	Starting Temp (°C)	Final Temp (°C)	Ice Melt Time (min)
Water			
Oil			
Rubbing Alcohol			

Questions

1. Different substances transfer energy (heat) at different rates.
2. Faster melting = faster energy transfer = more change in particle motion.

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?

Thermal Energy, Temperature, & Heat Transfer 6th, 7th, 8th Grade Lesson

- ✓ Comprehensive Content Overview – Covers Thermal Energy, Temperature, Particle Motion, and Heat Transfer.
- ✓ Student-Friendly Format – Clear visuals and comparisons support understanding of complex concepts.



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**

