

The Common Core English Language Arts Standards (CCELA)

CHAPTER 2, LESSON 1 – HEAT, TEMPERATURE, AND CONDUCTION

Reading Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.RST.6-8.3

Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

LITERACY.RST.6-8.4

Determine the meaning of symbols, key terms and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

LITERACY.RST.6-8.7

Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Students use the Activity Sheet to read and follow a multistep procedure to discover how heat is transferred from hot water to metal washers and from hot metal washers to water. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to energy transfer, temperature, and conduction at the molecular level. Students also integrate information from text with molecular models to improve their understanding.

Writing Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.WHST.6-8.1

Write arguments focused on discipline-specific content

- a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim (s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant accurate data and evidence that demonstrate an understanding of the topic or text using credible sources.

- c. Use words, phrases, and clauses to create cohesion and clarify the relationship among claim(s), counterclaims, reasons, and evidence.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.

Students use the Activity Sheet to write answers to questions about their observations. Students also describe how the molecular model illustrations and animations from the lesson relate to their observations. Students apply reasoning from the molecular models to evidence from their observations to make and support a claim that answers the Question to Investigate about why the temperature of an object changes when it is placed in hot water.

The Common Core English Language Arts Standards (CCELA)

CHAPTER 2, LESSON 2: CHANGING STATE - EVAPORATION

Reading Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.RST.6-8.3

Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

LITERACY.RST.6-8.4

Determine the meaning of symbols, key terms and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

LITERACY.RST.6-8.7

Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Students use the Activity Sheet to read and follow a multistep procedure to discover whether heat increases the rate of evaporation. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to energy transfer, molecular motion, and evaporation at the molecular level. Students also integrate information from text with molecular models to improve their understanding.

Writing Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.WHST.6-8.1

Write arguments focused on discipline-specific content

- a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim (s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant accurate data and evidence that demonstrate an understanding of the topic or text using credible sources.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationship

among claim(s), counterclaims, reasons, and evidence.

d. Establish and maintain a formal style.

e. Provide a concluding statement or section that follows from and supports the argument presented.

Students use the Activity Sheet to write answers to questions about their observations. Students also describe how the molecular model illustrations and animations from the lesson relate to their observations. Students apply reasoning from the molecular models to evidence from their observations to make and support a claim that answers the Question to Investigate about whether adding energy increases the rate of evaporation.

The Common Core English Language Arts Standards (CCELA)

CHAPTER 2, LESSON 3: CHANGING STATE - CONDENSATION

Reading Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.RST.6-8.3

Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

LITERACY.RST.6-8.4

Determine the meaning of symbols, key terms and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

LITERACY.RST.6-8.7

Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Students use the Activity Sheet to read and follow a multistep procedure to discover what happens when water vapor condenses. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to energy transfer, molecular motion, and condensation at the molecular level. Students also integrate information from text with molecular models to improve their understanding.

Writing Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.WHST.6-8.1

Write arguments focused on discipline-specific content

- a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim (s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant accurate data and evidence that demonstrate an understanding of the topic or text using credible sources.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationship

among claim(s), counterclaims, reasons, and evidence.

d. Establish and maintain a formal style.

e. Provide a concluding statement or section that follows from and supports the argument presented.

Students use the Activity Sheet to write answers to questions about their observations. Students also describe how the molecular model illustrations and animations from the lesson relate to their observations. Students apply reasoning from the molecular models to evidence from their observations to make and support a claim that answers the Question to Investigate about what happens when water vapor condenses.

The Common Core English Language Arts Standards (CCELA)

CHAPTER 2, LESSON 4: CHANGING STATE – FREEZING

Reading Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.RST.6-8.3

Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

LITERACY.RST.6-8.4

Determine the meaning of symbols, key terms and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

LITERACY.RST.6-8.7

Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Students use the Activity Sheet to read and follow a multistep procedure to discover how ice forms on the outside of a cold can. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to energy transfer, molecular motion, condensation, and freezing at the molecular level. Students also integrate information from text with molecular models to improve their understanding.

Writing Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.WHST.6-8.1

Write arguments focused on discipline-specific content

- a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim (s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant accurate data and evidence that demonstrate an understanding of the topic or text using credible sources.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationship among claim(s), counterclaims, reasons, and evidence.

- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.

Students use the Activity Sheet to write answers to questions about their observations. Students also describe how the molecular model illustrations and animations from the lesson relate to their observations. Students apply reasoning from the molecular models to evidence from their observations to make and support a claim that answers the Question to Investigate about how ice forms on the outside of a cold can.

The Common Core English Language Arts Standards (CCELA)

CHAPTER 2, LESSON 5: CHANGING STATE - MELTING

Reading Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.RST.6-8.3

Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

LITERACY.RST.6-8.4

Determine the meaning of symbols, key terms and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.

LITERACY.RST.6-8.7

Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

Students use the Activity Sheet to read and follow a multistep procedure to discover whether ice melts faster when placed in water. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to energy transfer, molecular motion, and melting at the molecular level. Students also integrate information from text with molecular models to improve their understanding.

Writing Standards for Literacy in Science and Technical Subjects 6-8

LITERACY.WHST.6-8.1

Write arguments focused on discipline-specific content

- a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim (s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant accurate data and evidence that demonstrate an understanding of the topic or text using credible sources.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationship

among claim(s), counterclaims, reasons, and evidence.

d. Establish and maintain a formal style.

e. Provide a concluding statement or section that follows from and supports the argument presented.

Students use the Activity Sheet to write answers to questions about their observations. Students also describe how the molecular model illustrations and animations from the lesson relate to their observations. Students apply reasoning from the molecular models to evidence from their observations to make and support a claim that answers the Question to Investigate about whether ice melts faster when it is placed in water.