

# The Common Core English Language Arts Standards (CCELA)

## CHAPTER 3, LESSON 1: WHAT IS DENSITY?

### 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 they can use density to identify an unknown substance. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to mass, volume, and density 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 density can be used to identify different substances.*

# The Common Core English Language Arts Standards (CCELA)

## CHAPTER 3, LESSON 2: FINDING VOLUME – THE WATER DISPLACEMENT METHOD

### 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 water displacement can be used to find volume and whether density can be used to identify unknown substances. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to mass, volume, water displacement, and density 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 the water displacement method can be used to calculate density and whether density can be used to identify unknown substances.*

# The Common Core English Language Arts Standards (CCELA)

## CHAPTER 3, LESSON 3: DENSITY OF WATER

### 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 the volume of a sample of water affects its density. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to mass, gram, volume, milliliter, and density, 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 the density of water is different for different volumes of water.*

# The Common Core English Language Arts Standards (CCELA)

## CHAPTER 3, LESSON 4: DENSITY – SINK AND FLOAT FOR SOLIDS

### 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 why a heavier wax candle floats while a lighter ball of clay sinks. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to mass, volume, and density 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 a heavier wax candle floats while a lighter ball of clay sinks.*



# The Common Core English Language Arts Standards (CCELA)

## CHAPTER 3, LESSON 5: DENSITY – SINK AND FLOAT FOR LIQUIDS

### 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 why water sinks in oil and isopropyl alcohol floats on oil. Students read the questions and information on the Activity Sheet and apply them to their observations to learn the meaning of words related to mass, volume, and density of liquids 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 water sinks in oil and isopropyl alcohol floats on oil.*

# The Common Core English Language Arts Standards (CCELA)

## CHAPTER 3, LESSON 6: DENSITY – TEMPERATURE AND DENSITY

### 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 temperature affects the density of 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 heat, molecular motion, attractions, and density 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 the temperature of water affects its density.*