

STAAR CONNECTION™

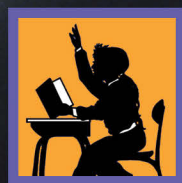
Diagnostic Series™

Science

5

teacher

(revised for streamlined TEKS)



KAMICO®

Instructional Media, Inc.

STAAR CONNECTION™

Science
5
teacher

Diagnostic Series™

XXIX/i/MMXXII

Version 2

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KAMICO® Instructional Media, Inc.

P.O. Box 1143

Salado, Texas 76571

Telephone: 254.947.7283 Fax: 254.947.7284

E-mail: kmichael@kamico.com Website: <https://www.kamico.com>

KAMICO® Instructional Media, Inc.
STAAR CONNECTION™
Introduction

KAMICO® Instructional Media's program is validated by scientifically based research. **STAAR CONNECTION™ Diagnostic Series™** and **Developmental Series™** can be used in tandem to ensure mastery of Texas reporting categories and TEKS. The *Diagnostic Series™* consists of a bank of assessments. Each assessment covers a mixture of reporting categories and TEKS. This research-based format provides continual reinforcement for and ensures retention of mastered concepts. To take full advantage of this series, administer an assessment to students. After they have completed the assessment, use it as an instructional tool. Go over each item with the class, discussing all correct and incorrect answers. Then, use the assessment as a diagnostic tool to determine a standard for which students need remediation. Find that standard in the *Developmental Series™*.

Each book in the *STAAR CONNECTION Developmental Series™* consists of isolated activities and assessments to allow for the development of specific TEKS. For every TEKS, there is at least one individual or group activity. The activities provide a fun, challenging, yet nonthreatening, way to develop mastery of the TEKS. In addition to these activities, each *Developmental Series™* book has assessments on isolated standards to be used to identify mastery or the need for further skill development or reinforcement. Continue to alternate between the *STAAR CONNECTION™ Diagnostic Series™* and the *Developmental Series™*.

KAMICO's **DATA CONNECTION®** software prints student answer sheets on plain paper using a standard laser printer, scans answer sheets using a TWAIN-compliant scanner, scores assessments, and disaggregates student academic data, showing which goals and objectives are mastered and which goals and objectives are in need of reinforcement. The software is preprogrammed to work with all KAMICO® assessments. It is easily customized to work with other instructional materials and assessments as well as teacher-, school-, district-, or state-created assessments. **DATA CONNECTION®** analyzes academic data from individual students, classes, grade levels, and demographic groups. Reports are presented in tabular and graphic form. Item analysis is provided to help determine the most effective method of instruction.

KAMICO® Instructional Media, Inc., supports efforts to ensure adequate yearly progress and eliminate surprises in high-stakes test results.

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Salado, Texas 76571
Telephone: 254.947.7283 Fax: 254.947.7284
E-mail: kmichael@kamico.com Website: <https://www.kamico.com>

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Diagnostic Series™
Grade 5 Science
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NOTE:

TEA advises that the Scientific Investigation and Reasoning Skills "will be incorporated into at least 40% of the test questions in reporting categories 1-4 and will be identified along with content standards." KAMICO® has followed these guidelines. However, to ensure thorough coverage of the Scientific Investigation and Reasoning Skills, KAMICO® writers have included extra questions over just those skills to ensure student mastery.

**State of Texas Assessments of Academic Readiness
Grade 5 Science Assessment
Eligible Texas Essential Knowledge and Skills**

**Reporting Category 1:
Matter and Energy**

The student will demonstrate an understanding of the properties of matter and energy and their interactions.

Grade 5

(5.5) **Matter and energy.** The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to

(A) classify matter based on measurable, testable, and observable physical properties, including mass, magnetism, physical state (solid, liquid, and gas), relative density (sinking and floating using water as a reference point), solubility in water, and the ability to conduct or insulate thermal energy or electric energy;

Readiness Standard

(B) demonstrate that some mixtures maintain physical properties of their ingredients such as iron filings and sand and sand and water; and

Supporting Standard

(C) identify changes that can occur in the physical properties of the ingredients of solutions such as dissolving salt in water or adding lemon juice to water.

Supporting Standard

Grade 3

(3.5) **Matter and energy.** The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to

(C) predict, observe, and record changes in the state of matter caused by heating or cooling such as ice becoming liquid water, condensation forming on the outside of a glass of ice water, or liquid water being heated to the point of becoming water vapor.

Supporting Standard

Reporting Category 2: Force, Motion, and Energy

The student will demonstrate an understanding of force, motion, and energy and their relationships.

Grade 5

- (5.6) **Force, motion, and energy.** The student knows that energy occurs in many forms and can be observed in cycles, patterns, and systems. The student is expected to
- (A) explore the uses of energy, including mechanical, light, thermal, electrical, and sound energy;
Readiness Standard
 - (B) demonstrate that the flow of electricity in closed circuits can produce light, heat, or sound;
Readiness Standard
 - (C) demonstrate that light travels in a straight line until it strikes an object and is reflected or travels through one medium to another and is *refracted*; and
Readiness Standard
 - (D) design a simple experimental investigation that tests the effect of force on an object.
Supporting Standard

Grade 3

- (3.6) **Force, motion, and energy.** The student knows that forces cause change and that energy exists in many forms. The student is expected to
- (B) demonstrate and observe how position and motion can be changed by pushing and pulling objects such as swings, balls, and wagons.
Supporting Standard

**Reporting Category 3:
Earth and Space**

The student will demonstrate an understanding of components, cycles, patterns, and natural events of Earth and space systems.

Grade 5

(5.7) **Earth and space.** The student knows Earth's surface is constantly changing and consists of useful resources. The student is expected to

(A) explore the processes that led to the formation of sedimentary rocks and fossil fuels; and

Readiness Standard

(B) recognize how landforms such as deltas, canyons, and sand dunes are the result of changes to Earth's surface by wind, water, or ice.

Readiness Standard

(5.8) **Earth and space.** The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to

(A) differentiate between weather and climate;

Supporting Standard

(B) explain how the Sun and the ocean interact in the water cycle;

Supporting Standard

(C) demonstrate that Earth rotates on its axis once approximately every 24 hours causing the day/night cycle and the apparent movement of the Sun across the sky; and

Readiness Standard

(D) identify and compare the physical characteristics of the Sun, Earth, and Moon.

Supporting Standard

Grade 4

- (4.7) **Earth and space.** The student knows that Earth consists of useful resources and its surface is constantly changing. The student is expected to
- (A) examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants; and
Supporting Standard
 - (C) identify and classify Earth's renewable resources, including air, plants, water, and animals; and nonrenewable resources, including coal, oil, and natural gas; and the importance of conservation.
Supporting Standard
- (4.8) **Earth and space.** The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to
- (A) measure, record, and predict changes in weather;
Supporting Standard
 - (B) describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; and
Supporting Standard
 - (C) collect and analyze data to identify sequences and predict patterns of change in shadows, seasons, and the observable appearance of the Moon over time.
Supporting Standard

Grade 3

- (3.7) **Earth and space.** The student knows that Earth consists of natural resources and its surface is constantly changing. The student is expected to
- (B) investigate rapid changes in Earth's surface such as volcanic eruptions, earthquakes, and landslides.
Supporting Standard
- (3.8) **Earth and space.** The student knows there are recognizable patterns in the natural world and among objects in the sky. The student is expected to
- (D) identify the planets in Earth's solar system and their position in relation to the Sun.
Supporting Standard

Reporting Category 4: Organisms and Environments

The student will demonstrate an understanding of the structures and functions of living organisms and their interdependence on each other and on their environment.

Grade 5

- (5.9) **Organisms and environments.** The student knows that there are relationships, systems, and cycles within environments. The student is expected to
- (A) observe the way organisms live and survive in their ecosystem by interacting with the living and nonliving components;
Readiness Standard
 - (B) describe the flow of energy within a food web, including the roles of the Sun, producers, consumers, and decomposers;
Readiness Standard
 - (C) predict the effects of changes in ecosystems caused by living organisms, including humans, such as the overpopulation of grazers or the building of highways; and
Supporting Standard
 - (D) identify fossils as evidence of past living organisms and the nature of the environments at the time using models.
Supporting Standard
- (5.10) **Organisms and environments.** The student knows that organisms have structures and behaviors that help them survive within their environments. The student is expected to
- (A) compare the structures and functions of different species that help them live and survive in a specific environment such as hooves on prairie animals or webbed feet in aquatic animals; and
Readiness Standard
 - (B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle.
Readiness Standard

Grade 3

(3.9) **Organisms and environments.** The student knows and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to

(A) observe and describe the physical characteristics of environments and how they support populations and communities of plants and animals within an ecosystem.

Supporting Standard

(3.10) **Organisms and environments.** The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to

(B) investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady beetles.

Supporting Standard

Scientific Investigation and Reasoning Skills

These skills will not be listed under a separate reporting category. Instead, they will be incorporated into at least 40% of the test questions in reporting categories 1–4 and will be identified along with content standards.

Grade 5

- (5.1) **Scientific investigation and reasoning.** The student conducts classroom and outdoor investigations following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to
- (A) demonstrate safe practices and the use of safety equipment as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment, including safety goggles or chemical splash goggles, as appropriate, and gloves, as appropriate; and
 - (B) make informed choices in the conservation, disposal, and recycling of materials.
- (5.2) **Scientific investigation and reasoning.** The student uses scientific practices during laboratory and outdoor investigations. The student is expected to
- (A) describe, plan, and implement simple experimental investigations testing one variable;
 - (B) ask well defined questions, formulate testable hypotheses, and select and use appropriate equipment and technology;
 - (C) collect and record information using detailed observations and accurate measuring;
 - (D) analyze and interpret information to construct reasonable explanations from direct (observable) and indirect (inferred) evidence;
 - (E) demonstrate that repeated investigations may increase the reliability of results;
 - (F) communicate valid conclusions in both written and verbal forms; and

- (G) construct appropriate simple graphs, tables, maps, and charts using technology, including computers, to organize, examine, and evaluate information.
- (5.3) **Scientific investigation and reasoning.** The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to
- (A) analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;
 - (B) draw or develop a model that represents how something that cannot be seen such as the Sun, Earth, and Moon system and formation of sedimentary rock works or looks; and
 - (C) connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.
- (5.4) **Scientific investigation and reasoning.** The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to
- collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, prisms, mirrors, balances, spring scales, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observations of habitats or organisms such as terrariums and aquariums.

Name _____ Date _____

- 1** Tia is going to separate some recycled materials using a magnet. The materials she is separating out are —

 - A** plastic bottles.
 - B** aluminum cans.
 - C** iron nails.
 - D** glass jars.

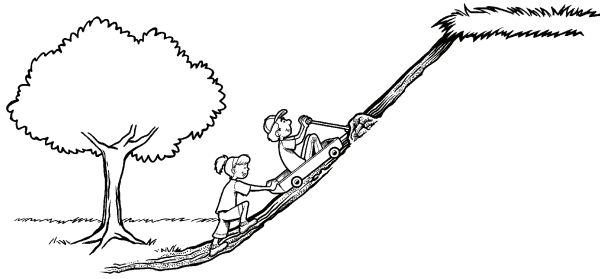
- 2** Celeste puts a stick of butter in a bowl and puts it into a microwave oven. She heats the butter on high for 30 seconds. Which statement correctly describes the butter's change in state?

 - F** The butter changes from a liquid to a gas.
 - G** The butter changes from a gas to a liquid.
 - H** The butter changes from a solid to a liquid.
 - J** The butter changes from a solid to a gas.

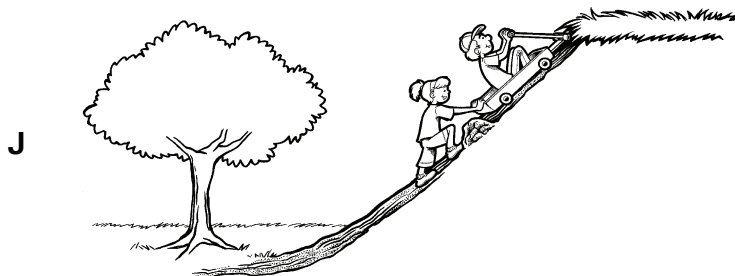
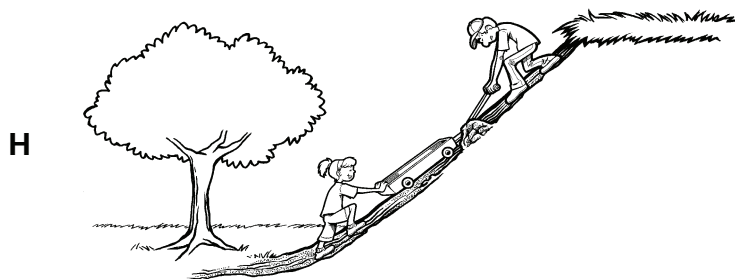
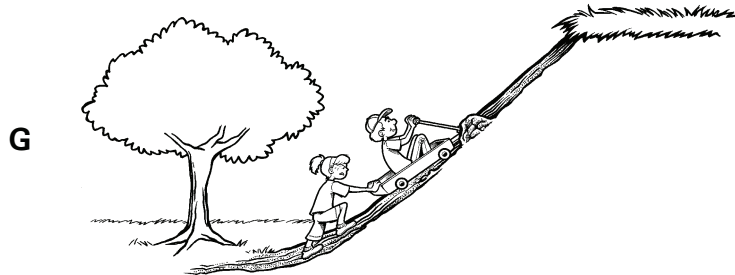
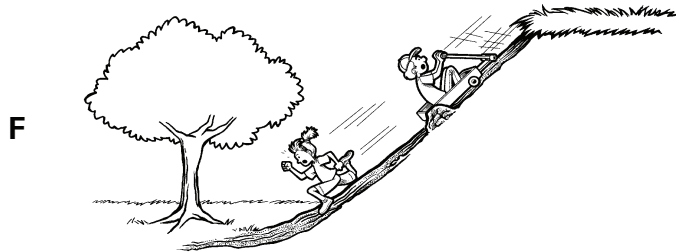
- 3** The blades of tall windmills can be seen turning on some high ridges in west Texas. The giant blades turn generators that convert —

 - A** wind energy into solar energy.
 - B** electrical energy into wind energy.
 - C** solar energy into wind energy.
 - D** wind energy into electrical energy.

4 Aida is pushing her brother in a wagon up a hill.



Which drawing shows Aida's push force moving the wagon?



- 5** Coal and oil are fossil fuels that were formed hundreds of millions of years ago. What were the three main factors needed to turn the remains of dead organisms into fossil fuels?
- A** unlimited oxygen, water, and bacteria
 - B** absence of oxygen, natural gas, and heat
 - C** salt water, pressure, and bacteria
 - D** absence of oxygen, pressure, and heat
- 6** The Sun and wind lift tiny particles of moisture from the ocean. This water vapor mixes with air. When the air cools, the vapor forms clouds. Clouds shed rain. This formation of clouds and rain is an example of —
- F** condensation.
 - G** runoff.
 - H** evaporation.
 - J** absorption.

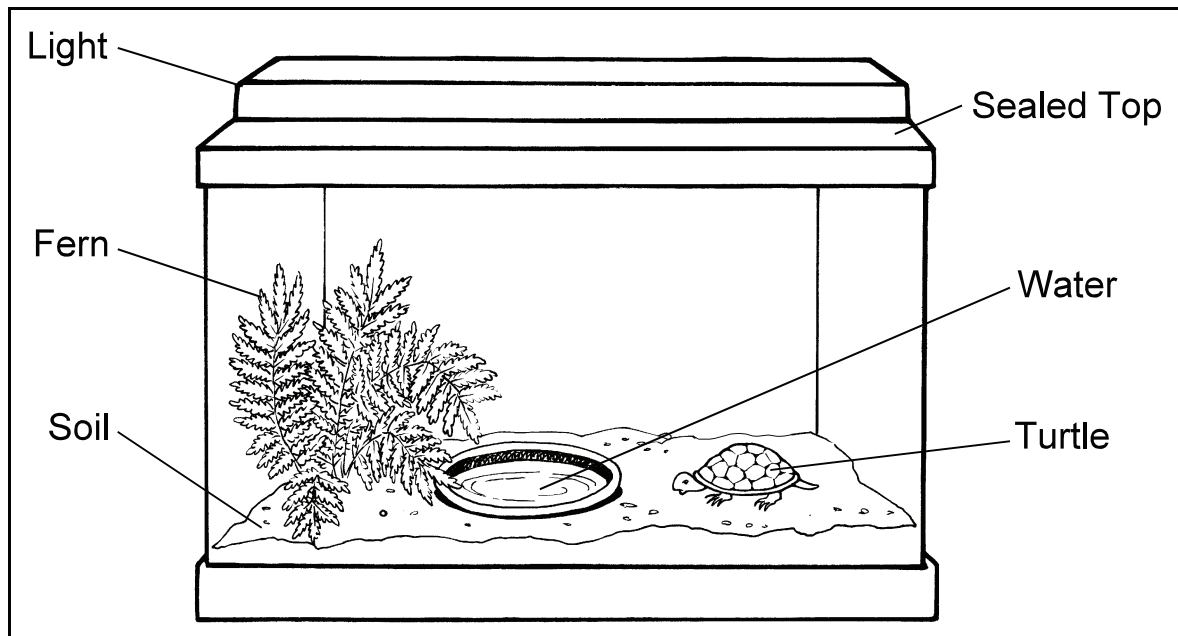
- 7 Jeremy is collecting weather information. He sets a thermometer and a shallow pan outside of his house one evening. The next day, he observes the weather in the morning and in the evening. He records his findings in a table.

Weather Data Table for March 8th					
Time of Observation	Cloud Cover	Temperature (degrees F)	Wind Conditions	Wind Direction	Precipitation (in inches)
Mid-Morning	cloudy	78	calm	no wind	0
Late Afternoon	clear	58	breezy	from north	1.8

Which two measurements most likely suggest that a cold front moved in?

- A cloud cover and wind direction
- B wind conditions and precipitation
- C temperature and wind conditions
- D precipitation and cloud cover

8 Examine the drawing.



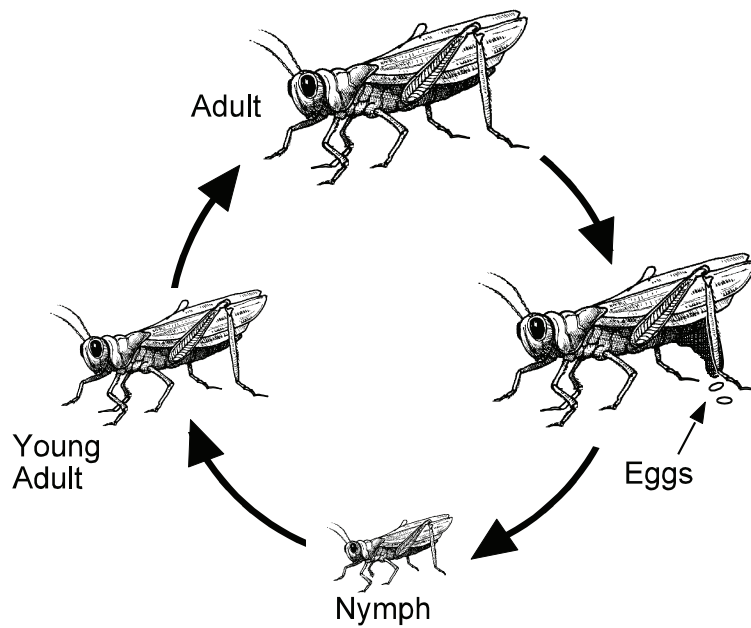
The turtle and the fern live in a sealed terrarium. How do they interact with one another to obtain and supply a basic resource? The turtle depends on the fern to —

- F supply carbon dioxide, and the fern depends on the turtle to provide food.
- G supply oxygen, and the fern depends on the turtle to provide carbon dioxide.
- H supply water, and the fern depends on the turtle to provide oxygen.
- J supply food, and the fern depends on the turtle to provide oxygen.

9 Swans, frogs, turtles, and beavers are animals that live in or around ponds and rivers. What structure do these animals have in common, and what is the function of the structure?

- A These animals have strong legs that they use to kick predators.
- B These animals have sharp teeth to chew hard bark and tough plant stems.
- C These animals have webbed feet to help them swim through water.
- D These animals have thick layers of fat to protect them from cold.

10 Examine the life cycle of the grasshopper.



Based on your knowledge of animal life cycles, the life cycle of a grasshopper is most similar to the life cycle of a —

- F frog.
- G butterfly.
- H snake.
- J dog.

11 Adele accidentally burned herself by touching hot glassware in the classroom. The first thing Adele should do is —

- A** put a bandage on the burn.
- B** tell her teacher what happened.
- C** run to the phone and call her parent.
- D** pour rubbing alcohol on the burn.

12 Andy wants to study the growth of sunflowers for a science fair project. She knows she needs to have a well-defined question that can be tested reliably.

Which question would be best for Andy to ask?

- F** Will sunflowers grow faster when they receive more sunlight than water?
- G** Will sunflowers grow faster when they are given more fertilizer?
- H** Will sunflowers grow faster when they are given more fertilizer and air?
- J** Will sunflowers grow faster in a field or on a mountain top?

STAAR CONNECTION™
Diagnostic Series™ Grade 5 Science
TEKS Alignment Chart

NOTE:

TEA advises that the Scientific Investigation and Reasoning Skills "will be incorporated into at least 40% of the test questions in reporting categories 1-4 and will be identified along with content standards." KAMICO® has followed these guidelines. However, to ensure thorough coverage of the Scientific Investigation and Reasoning Skills, KAMICO® writers have included extra questions over just those skills to ensure student mastery.

For each grade or course, TEA has identified some of the TEKS eligible to be assessed on STAAR as readiness standards. These readiness standards will be emphasized on the STAAR assessments. The remaining TEKS eligible to be assessed on STAAR are considered supporting standards. Although supporting standards will be assessed, they will not be emphasized on STAAR. KAMICO® has shown whether each question assessed in this book is aligned to a readiness standard or a supporting standard.

Readiness standards

- are essential for success in the current grade or course,
- are important for preparedness for the next grade or course,
- support college and career readiness,
- necessitate in-depth instruction, and
- address broad and deep ideas.

Supporting standards, although introduced in the current grade or course,

- may be emphasized in a subsequent year,
- may be emphasized in a previous year,
- play a role in preparing students for the next grade or course but not a central role, and
- address more narrowly defined ideas.

Assessment 1

Question Number	Answer	Reporting Category	TEKS	Readiness or Supporting Standard	SIRS
1	C	1	5.5A 5.5B	Readiness Supporting	5.2D
2	H	1	3.5C	Supporting	5.2D
3	D	2	5.6A	Readiness	5.2D
4	J	2	3.6B	Supporting	5.3A
5	D	3	5.7A	Readiness	
6	F	3	5.8B	Supporting	5.2D
7	C	3	4.8A	Supporting	5.2C 5.2D
8	G	4	5.9A	Supporting	
9	C	4	5.10A	Readiness	5.2D
10	H	4	3.10B	Supporting	
11	B	SIRS	5.1A		5.1A
12	G	SIRS	5.2B		5.2B