Project Update

Darcy McMahon and 3DSPA Team
Agenda

• What are performance tasks?
• Why do we need performance tasks for science?
• How does 3DSPA help us move toward the new standards and testing?
• How can you get involved?
What Are Performance Tasks?
Bundles, Phenomena, Scenarios

Performance Tasks focus on a BUNDLE of Performance Expectations (Standards), not just one.

Performance Tasks are centered around real-world PHENOMENON (a puzzling event that really happens).

We use the GRASPs framework to develop our SCENARIOS, which allow students to problem-solve through a real context.
Constructing a Performance Task Scenario: 

**GRASP(s)**

**Goal:**
- Your task is ____
- The goal is to ____
- The problem/challenge is ____
- The obstacle(s) to overcome is (are) ____

**Situation:**
- The context you find yourself in is ____
- The challenge involves dealing with ____

**Role:**
- You are ____
- You have been asked to ____
- Your job is ____

**Product/Performance and Purpose:**
- You will (action verb) ____ in order to ____
- You need (action verb) ____ so that ____

**Standards & Criteria for Success:**
- Your performance needs to ____
- Your work will be judged by ____
- Your product must meet the following standards: ____

**Audience:**
- Your client(s) is (are) ____
- The target audience is ____
- You need to convince ____
Two Options for using Performance Tasks in the Classroom

How do 3D Science Performance Assessment Tasks fit with regular curriculum and instruction?

Option 1

* Regular Curriculum and Instruction

** 3DSPA

* Regular Curriculum and Instruction

** 3DSPA

* Regular Curriculum and Instruction

** 3DSPA

Option 2

* Introduce Phenomenon

** Introduce 3DSPA Phenomenon

* Introduce Phenomenon

** Introduce 3DSPA Phenomenon

* Regular Curriculum and Instruction

** 3DSPA
### Final Task:
**Model, Design, Explain, Argue, Investigate**

<table>
<thead>
<tr>
<th>Learning Performance:</th>
<th>Phenomena: Wind Turbine - Your town is in need of energy reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy can be moved (transferred) from one place to another. Energy can be changed (converted) from one thing to another.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal: The students will design a wind turbine to transfer and convert wind to electricity, and explain why their design is best.</th>
<th>Role: You are an engineer being asked to design a wind turbine to charge the town's power station</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audience: The City council and/or power company for your town.</th>
<th>Situation: Your town needs power reserves (batteries). You are tasked with designing a turbine that can spin 25-35/min. (adjusted per teacher needs) Charge the town battery. Too fast will explode the town power station, too slow will not charge the reserve.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

**CONSTRAINTS:**

Given: limited supplies and time limit

(paper sheets, coffee filters, cups, straws, straight pins, string, etc)

The air source will be a low speed hair dryer.

| Product / Performance: The students will turn a pinwheel | |
|---------------------------------------------------------------| |
| (turbine model) which can be counted to turn (25-35 as assigned by teacher) times in a minutes. They will write an explanation of their best choice explaining using data. | |
Teacher Example

Fourth Grade: Energy Bundle

Draw a model AND LABEL your final Turbine MODEL. Use arrows to show the direction of the movement.

How many times did your turbine spin in a MINUTE? __ spin __ times.

What features make your turbine choice the best design for our town? (Please state 3 reasons in sentences) It's very colorful so it looks like a flower in the sky. Also, it glows up the dark so it can look cool in the night. And that's why I'm voting for this design.

Please explain how energy was transferred in this design. When the air transfers to the windmill, it goes through the spaces and moves the windmill.

In the power station, please explain how the energy will be converted for use in the USE VOCABULARY.

Kite in the power station and wind transfers wind through the spaces in the electrical energy station lights then heat.
Middle School

<table>
<thead>
<tr>
<th>Phenomena: How can life be supported on Mars?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture of Mars landscape (samples can be found at: Pics-of space- mars landscape; or NASA Gallery images)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Goal: Students produce a scientific explanation that demonstrates understanding for how food (sugar/matter) is made, used and the flow of energy in the biosphere.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role: Astrobiologist for NASA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Audience:</th>
</tr>
</thead>
<tbody>
<tr>
<td>NASA’s Mars Colonization Committee (hypothetical)</td>
</tr>
</tbody>
</table>

| Situation: NASA has decided to build a Biosphere on Mars for future colonization. As a scientist, your task will be to analyze the food needs of the colonists and provide scientific reasoning for what is needed. |

<table>
<thead>
<tr>
<th>Product / Performance: A scientific explanation (claim, evidence, and reasoning) with support that shows within the biosphere the materials needed to support life on Mars.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- How food is made</td>
</tr>
<tr>
<td>- How food is used</td>
</tr>
<tr>
<td>- Flow of energy</td>
</tr>
<tr>
<td>- Conditions that affect food growth</td>
</tr>
<tr>
<td>- Thoughts about whether Mars could support life</td>
</tr>
</tbody>
</table>

The scientific explanation is presented to the ‘Mars Colonization Committee’.
Teacher Example

Middle School: Conservation of Matter and Energy Bundle
### Learning Performances:

**LP1:** Students create a model to represent interactions between the inputs and outputs (energy and matter) of photosynthesis and cellular respiration between an organism (system) and its surroundings.

**LP2:** Students model the relationship between photosynthesis and the organic carbon that makes up all biological molecules and demonstrate the conservation of matter during the breaking and formation of chemical bonds to create new molecules (i.e., protein, carbohydrates...) and whether they are assimilated into biomass or are burned for energy or released as waste.

**LP6:** Through the use of a model, students will be able to account for energy, as it flows and mass, as it cycles, through ecosystems, organisms and the biosphere (ultimately leading to demonstration of understanding of the Laws of Conservation of Energy and Matter).

<table>
<thead>
<tr>
<th>Phenomena: Carbon and energy move through organisms and ecosystems and can be followed through methods such as radiolabeling.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> Student will develop a model that demonstrates their understanding of energy and matter transfer through cellular respiration and photosynthesis at the organism and ecosystem levels.</td>
</tr>
<tr>
<td><strong>Role:</strong> A DNR, department of natural resources, officer studying the Bald Eagle population in Northern Lower Michigan.</td>
</tr>
<tr>
<td><strong>Audience:</strong> The producer and director for a news broadcast.</td>
</tr>
<tr>
<td><strong>Situation:</strong> A baking soda manufacturer, who shall remain nameless, has been accused of depositing radioactive bicarbonate ($\text{HCO}_3^-$) into a river in Northern Michigan. The DNR, department of natural resources, is concerned about where the radioactivity will end up. You test for evidence of radioactivity in and around the river and find high concentrations of radioactive carbon in the breast muscle of Bald Eagles.</td>
</tr>
<tr>
<td><strong>Product / Performance:</strong> Students will produce a model that shows the flow of the radioactive carbon and energy through the ecosystem that resulted in this finding starting with the bicarbonate in the hydrosphere and ending with carbon atoms in eagle muscle.</td>
</tr>
</tbody>
</table>
Teacher Example

High School: Biology
So, what do you think . . .?

Turn to an elbow partner and share your ideas about what a performance task is. . .
3DSPA Definition

Performance Task:

• A performance task is an assessment task with multiple components in which we can measure student understanding in three dimensions. Students are actively engaged in scientific practices to explain a phenomenon embedded in a scenario.

• Embedded in a social context
Why Do We Need Performance Tasks for Science?
Why Do We Need Performance Tasks?

Consider the following performance expectations:

- 2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.

- MS-LS1-7 Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

- HS-PS3-3 Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
A Framework for K-12 Science Education

- Content should be minimized to core ideas. Breadth of standards led to checklist approach.
- Education should focus more on science practices. Practice (inquiry and reflection) were misunderstood and deemphasized.
- 3 Dimensional learning and assessment; practices, core ideas, cross-cutting concepts should be interwoven.
  Content independent of practices does not work.
How Should We Assess Three Dimensions?

• The 3D learning model in the NRC Framework comes from a synthesis of the research literature that studied how best to support equitable student learning in science (e.g., through powerful instruction), but educational assessments haven’t historically been developed for a 3D model of learning. . . . from: How to Assess Three-Dimensional Learning in Your Classroom
NRC Recommends . . .

Multi-Component Tasks

To adequately cover the three dimensions, assessment tasks will need to contain multiple components (e.g., a set of interrelated questions).

Specific components may focus on individual practices, core ideas, or crosscutting concepts, but, together, the components need to support inferences about students’ three-dimensional science learning as described in a given performance expectation.
Can we assess these PE’s solely through traditional style assessment?

- 2-LS2-1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.

- MS-LS1-7 Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

- HS-PS3-3 Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.
Three Dimensions Work Together

**NGSS calls for students to become proficient in science and engineering:**

- Demands integration of 3 dimensions – not separate treatment of “scientific ideas” and “inquiry”
- Need to pay attention to how we build understanding over time and across the disciplines
- Need to involve learners in using science practices to develop and apply scientific & engineering ideas

This shift requires 3-Dimensional Assessment - a **Performance Task**
Vision for Balanced Assessment System for Michigan Science Standards

Unit based – Performance Tasks, Portfolio, Problem solving

Item Clusters & Performance Tasks

Item Clusters

Classroom Formative Assessment

Classroom Summative Assessment

Performance Task

Module Assessment

Interim Assessment

M-STEP Assessment

Module Assessment

Interim Assessment

MDE

Module Assessment

Performance Task

Performance Task

Performance Task

Performance Task

Module Assessment

Module Assessment

Module Assessment

3DSPA

Curriculum

Flow of Data

Gap
Practices are Two Sided Coins

Each of the eight science and engineering practices has dimensions and progressions that can only be fully expressed both within and outside of a social context.
M-STEP Style Item Clusters are NOT Enough!

Developing and Using Models
Planning and Carrying Out Investigations
Constructing Explanations and Designing Solutions
Engaging in Argument from Evidence

IT'S MORE THAN JUST
A PERFORMANCE TASK
How Does 3DSPA Help Us Move Toward the New Standards?

And Prepare for State Tests??
Sometimes the Tail Wags the Dog

Because assessment can sometimes drive what we are doing and how we do it . . . It is important that assessment should look like exemplary instruction.
E.ES.07.12 Describe the relationship between the warming of the atmosphere of the Earth by the sun and convection within the atmosphere.

MS-ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.

Rather than adapting teaching to look like assessments, “assessments should look like GOOD teaching.” - Nancy Songer
Vision for Balanced Assessment System for Michigan Science Standards

Item Clusters & Performance Tasks

Unit based – Performance Tasks, Portfolio, Problem solving

Classroom Formative Assessment

Classroom Summative Assessment

Performance Task

Module Assessment

Module Assessment

Module Assessment

Interim Assessment

Interim Assessment

M-STEP Assessment

MDE

3DSPA

Curriculum

Flow of Data

Gap
Teacher Experience with the 3DSPA Task Development Process

• How did the professional learning and assessment development impact your understanding of 3D teaching, learning, and assessment?
Survey Results

Participants showed substantial growth by increasing understanding by 20%.
Survey Results

Participants showed substantial improvement of 14% in comfort level with 3D assessments.
Unpacking

<table>
<thead>
<tr>
<th>Practices</th>
<th>Core Ideas</th>
<th>CCC</th>
</tr>
</thead>
</table>

Learning Performances

- 3D Learning Targets
- In Order of Learning

Summative Assessment Development

- Phenomena / Scenario / Directions
- Checkbric

Formative Assessments Development

- Task / Directions
- Teacher Look-For’s

Finalize Task
### Unpacking the Standards

<table>
<thead>
<tr>
<th>Performance Expectation: Code:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Evidence of high performance of Science &amp; Engineering Practices</th>
<th>Evidence of high level understanding of Disciplinary Core Idea</th>
<th>Evidence of depth of knowledge of Cross-Cutting Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>The student will be able to:</td>
<td>The student will understand:</td>
<td>The students will keep considering:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Learning Performances**

Learning target: 3 dimensional from above
1. Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. [Clarification Statement: Emphasis is on explanations of the evolutionary relationships among organisms in terms of similarity or differences of the gross appearance of anatomical structures.]

2. Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. [Clarification Statement: Emphasis is on using simple probability statements and proportional reasoning to construct explanations.]

### Evidence of high performance of Science & Engineering Practices

**Constructing an Explanation**
- Construct an explanation of observed relationships
- Use written, oral, pictorial, or kinesthetic format to construct an explanation of the phenomenon
- Use the Claim-Evidence-Reason model for explanation, making predictions, inferences
- Identify the evidence that supports points in an explanation
- Reason, data, investigate, observe, read data and interpret, simulations
- Use evidence (e.g., measurements, observations, patterns) that provides evidence to support an explanation
- Identify the evidence that supports particular claims in an explanation

### Evidence of high level understanding of Disciplinary Core Idea

**Patterns**
- Used to identify cause and effect relationships
- Similarities and differences
- Fossil records
- Infer evolutionary history/relationships

**Cause and Effect**
- Use simple probability statements and proportional reasoning to construct explanations
- Make observations to relate A causing B
- Classify relationships as causal or correlational, recognizing that correlation does not necessarily imply causation
- Can be used to predict

### Evidence of depth of knowledge of Cross-Cutting Concept

- Students will make observations on a population of organisms and look for evidence/examples of genetic variation.
- Students will construct an explanation of observed patterns that genetic variations exist in a population and are passed on to future offspring.
- Students will investigate genetic variations that can either be an advantage or disadvantage in a given environment and predict how the variations could affect the population.
- Students will use simple probability statements and proportional reasoning to construct explanations that variations either increase/decrease the predominance of certain traits and suppression of others within the population.

**Phenomenon/Big Idea:**
- Whales evolved from land-dwelling mammals
- Peppered moth and Industrial Revolution
- How is a dinosaur related to your turkey dinner?
- Where is your tail?
- Lizard claws, bird beaks, etc natural selection in action
- Antibiotic resistance
- Pesticide resistance
Learning Performances (Targets)

<table>
<thead>
<tr>
<th>Learning Performances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students use graphs, charts and images to conclude that the human population has undergone exponential growth.</td>
</tr>
<tr>
<td>Students construct a claim based on evidence that predicts the impact of human population growth on earth systems and natural resource consumption using cause and effect.</td>
</tr>
<tr>
<td>Using multiple sources of information (such as graphs, charts and images), students use the design cycle to develop a solution which minimizes the human impacts on the environment.</td>
</tr>
<tr>
<td>Students create explanations using variables that identify causal or correlational relationships between human activities (fishing, mining, land use decisions, water usage, pollution) and their impacts.</td>
</tr>
<tr>
<td>Students use graphs, charts and images created from technologies that monitor human impacts on the environment, and use scientific reasoning to generate adequate explanations or conclusions.</td>
</tr>
<tr>
<td>Students create explanations that relate the independent variable of human population growth to the dependent variable of a given human impact on earth systems (changes to the appearance, composition and structure) and/or the consumption of natural resources (freshwater, mineral, and energy).</td>
</tr>
<tr>
<td>Using data, students construct written arguments to either refute or accept scientific explanations and solutions to factors that affect human sustainability.</td>
</tr>
</tbody>
</table>
## Formative Assessments

**Formative Assessment Task 1**

**Learning Performance:**

Students observe an object at rest and explain the cause of its immobility.

**Description (Phenomena, Scenario, Task)**

Phenomenon: Inertia—An object at rest stays at rest and an object in motion will stay in motion, unless an outside force acts on it.

Scenario/Task: Students will observe an object at rest, discuss the causes of immobility, and then write/draw an explanation of why this is happening.

**Directions:** Observe three ring magnets on a pencil. Why are they not moving? What keeps them in place? Discuss in small groups what is going on making sure to provide evidence for your opinion (maybe a drawing, acting it out, whatever you need to do to get your idea across). After discussion, go back to your seat and write on a post-it or half-sheet of paper your explanation for this phenomenon. Make sure to include in your explanation how the forces are exerted on the objects and the direction of the force.

**Scoring / Teacher Look-For’s:**

Look for explanation of balanced/unbalanced forces, attraction/repulsion, magnetism, direction of forces, and the cause of these concepts.

Provide feedback so that students know where they stand and what they need to do to improve.

**Expected Duration:** ~50 minutes
<table>
<thead>
<tr>
<th>Evidence Statements below:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Student models photons causing electrons to be ejected from a metal via the photoelectric effect</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>- Isaac Newton proposed the particle model of light</td>
<td></td>
</tr>
<tr>
<td>- Emphasis placed on the incident light wave having a minimum energy to achieve the effect</td>
<td></td>
</tr>
<tr>
<td>- Energy of ejected electrons is directly proportional to energy of incident light</td>
<td></td>
</tr>
<tr>
<td>Student argues that the wave model is not a viable model to explain the photoelectric effect</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>- Light intensity alone has no impact on the photoelectric effect</td>
<td></td>
</tr>
<tr>
<td>- The energy of the incident light is transferred to the ejected electron</td>
<td></td>
</tr>
<tr>
<td>Student connects the photoelectric effect to the functionality of solar cells.</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>- The energy from the ejected electrons is captured to transform solar energy into electrical energy</td>
<td></td>
</tr>
<tr>
<td>LP Total:</td>
<td></td>
</tr>
<tr>
<td>Learning Performance: Students will create an argument that states why the particle model of light is most useful in explaining the mechanism that results in the photoelectric effect.</td>
<td></td>
</tr>
<tr>
<td>Evidence Statements here:</td>
<td></td>
</tr>
<tr>
<td>Student provides evidence that the regeneration of the electric and magnetic fields of a light wave that enables its propagation through space</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>- Evidence could include but not limited to data from the single and double slit experiments</td>
<td></td>
</tr>
<tr>
<td>- Christian Huygens proposed the wave model of light</td>
<td></td>
</tr>
</tbody>
</table>
Performance Tasks

Invasive Species Cause/Effect:

We have been learning about invasive species throughout this unit and how one species can affect a food web. As we move into a class about invasive species you have played the Invaders game on Google Classroom complete the following chart.

- Let’s think about the invasive species the zebra mussel. In the chart below, create a model by drawing in the boxes and explaining along with (the boxes) the effects the zebra mussel has had on the Great Lakes ecosystem.

**Invasive Species Cause/Effect:**

We have been learning about invasive species throughout this unit and how one species can affect a food web. So after we have discussed as class about invasive species and you have played the Invaders game on Google Classroom complete the following chart.

- Let’s think about the invasive species the zebra mussel. In the chart below, create a model by drawing in the boxes and explaining along with (the boxes) the effects the zebra mussel has had on the Great Lakes ecosystem.

**Cause (before)**

**Effect (after)**
Performance Tasks

- Excessive UV exposure has a negative and damaging effect on the skin and body.
- Degrees of sunburn:
  - First degree: a burn that only affects the outer layer of the skin. In first degree the skin will appear red and warm, it can also be tender and inflamed.
  - Second degree: a burn that can reach down to the second portion of skin, the dermis. The skin will have the same symptoms as a first degree sunburn, but it is also likely to have blisters.
  - Third degree: causes damage to each layer of the skin, it doesn't hurt nearly as much as a second or first degree burn because this degree of burn has damaged the nerves in the skin. The appearance of this burn is whiteish. This burn is the least common type of sun burn.

Dangers of Too Much Sun Exposure

- Excessive UV exposure has a negative and damaging effect on the skin and body.
- Degrees of sunburn:
  - First degree: a burn that only affects the outer layer of the skin. In first degree the skin will appear red and warm, it can also be tender and inflamed.
  - Second degree: a burn that can reach down to the second portion of skin, the dermis. The skin will have the same symptoms as a first degree sunburn, but it is also likely to have blisters.
  - Third degree: causes damage to each layer of the skin, it doesn't hurt nearly as much as a second or first degree burn because this degree of burn has damaged the nerves in the skin. The appearance of this burn is whiteish. This burn is the least common type of sun burn.
In the classroom experience...

- What did you find in your experience facilitating the tasks with students?
How Can You Get Involved?
What is Coming Up?

• Tasks are AVAILABLE in Illuminate, website, and Moodle

• Online introduction available on Edupaths

• Looking for Revision Team Members
Three Dimensional Science Performance Assessments
MSS: HS: LS: 3DSPA: How Environment Can Impact Homeostasis


Created by: (t) Admin, Assessment/Test.
# Questions: 6
# Standards: 5
# Question Groups: 6

Administrations

New Administration

There are no administrations for this assessment.

Answer Key

<table>
<thead>
<tr>
<th>Question</th>
<th>Correct</th>
<th>Points</th>
<th>In Rubric</th>
<th>Standards</th>
<th>Question Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>4</td>
<td>4</td>
<td>Yes</td>
<td>NBDWDC SCI 9-12 HS LS1-2, ABDCCD SCI HS LS1-2</td>
<td>Students will use a model of skin structure to explain hierarchical organizations</td>
</tr>
<tr>
<td>Q2</td>
<td>4</td>
<td>4</td>
<td>Yes</td>
<td>NBDWDC SCI 9-12 LS1 A, NBDWDC SCI 9-12 HS LS1-2, ABDCCD SCI HS LS1-2</td>
<td>Students will demonstrate using their model and explanation the organization of cells and tissues of skin layers (cells -&gt; tissues -&gt; organs)</td>
</tr>
<tr>
<td>Q3</td>
<td>4</td>
<td>4</td>
<td>Yes</td>
<td>NBDWDC SCI 9-12 LS1-2, ABDCCD SCI HS LS1-2</td>
<td>Students demonstrate understanding of the structure function relationship of the hierarchical organization of organs of the system</td>
</tr>
<tr>
<td>Q4</td>
<td>4</td>
<td>4</td>
<td>Yes</td>
<td>NBDWDC SCI 9-12 LS1-3, ABDCCD SCI HS LS1-3</td>
<td>Students will interpret interviews and online research data and describe changes of homeostasis in the educational material for parents</td>
</tr>
<tr>
<td>Q5</td>
<td>4</td>
<td>4</td>
<td>Yes</td>
<td>NBDWDC SCI 9-12 LS1 A, NBDWDC SCI 9-12 HS LS1-3, ABDCCD SCI HS LS1-3</td>
<td>Student will communicate the short and long-term effects of sunburn within the educational material for parents</td>
</tr>
<tr>
<td>Q6</td>
<td>4</td>
<td>4</td>
<td>Yes</td>
<td>NBDWDC SCI 9-12 LS1-3, ABDCCD SCI HS LS1-3</td>
<td>Student will summarize how sunburn (change) affects homeostasis (stability) short and long-term on the integumentary system, include how to prevent sunburn</td>
</tr>
</tbody>
</table>

Performance Bands


<table>
<thead>
<tr>
<th>Color</th>
<th>Minimum Value</th>
<th>Label</th>
<th>Mastery?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>90% above</td>
<td>Advanced</td>
<td>Yes</td>
</tr>
<tr>
<td>Green</td>
<td>80% to any score less than 90%</td>
<td>Proficient</td>
<td>Yes</td>
</tr>
<tr>
<td>Yellow</td>
<td>70% to any score less than 80%</td>
<td>Basic</td>
<td>No</td>
</tr>
<tr>
<td>Yellow</td>
<td>60% to any score less than 70%</td>
<td>Below Basic</td>
<td>No</td>
</tr>
<tr>
<td>Yellow</td>
<td>0% to any score less than 60%</td>
<td>Far Below Basic</td>
<td>No</td>
</tr>
</tbody>
</table>

Materials

- Title: 3DSPA_HS_LS_-_Multicellular_Organisms_Homeostasis_Performance_Task_-_Check_Bin
  - Type: User Admin, Assessment/Test
  - Date Uploaded: January 29, 2017, 10:20 am

- Title: 3DSPA_HS_LS_-_Multicellular_Organisms_Homeostasis_Performance_Task_-_Google_Docs
  - Type: User Admin, Assessment/Test
  - Date Uploaded: January 29, 2017, 10:14 am
Online Introduction to 3DPSA

M-STEP Item Clusters and SEPs

The M-STEP item clusters are not enough. To effectively assess students' knowledge of the new standards, they need to be:

- Developing and Using Models
- Planning and Carrying Out Investigations
- Constructing Explanations and Designing Solutions
- Engaging in Argument from Evidence

The practices are two-sided coins. Each of the eight science and engineering practices has dimensions and progressions that can only be fully expressed both within and outside of a social context.
EduPaths Module

If you are wondering: How can I use 3DSPA Tasks in my classroom? . . .

• Intro to 3DSPA
• 2-4 hours
• Links to Performance Assessment Tasks
PERFORMANCE TASK
REVISION TEAM

Three-Dimensional Science Performance Assessments (3DSPA) Seeks Revision Team Members

EVENT DETAILS
June 26-28, 2018
8:30 am to 3:30 pm
CMU
Stipends Available
How You Can Get Involved . . .

Sign up Sheet – add contact info and which you are interested in.

• Contact Us:
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    • (989)615-4372           (989) 430-1886