

In groups of two or three please complete the following activities:

KVCC Science Teacher Leader Culminating Project



1. Select a Performance Expectation that you will teach early in the coming school year.

Grade Band/Level: 7

PE: 07-PS2-4

2. List the SEP, DCI and CCC that the performance expectation contains.

SEP: Engaging in Argument from Evidence (oral & written pres.)

DCI: PS2.B Types of Interactions

CCC: Systems & System Models

3. List the connections to literacy, math and other DCI within the PE.

Literacy: WHST.6-8.1 - Write arguments from disciplined content

Math: \emptyset

Other DCI: \emptyset

4. Use the Framework, your KCAS, the accompanying appendices, and the intent protocol or dissection guide to reach a consensus with your partner(s) on the intent of the PE.

Thoughts on intent:

Have students make a claim w/ reasoning why they think mass affects gravitational interactions & are attractive. Then, expose them to an online simulation (for ex: ability to manipulate planet mass) & record data

5. Deconstruct the PE to list student friendly knowledge, reasoning/skill, and product targets.

Knowledge:

#1 I can explain that gravity is a mutual force of attraction between two bodies. #2 I can explain how mass affects gravitational attraction.

→ aid students in argument

Also think: & oral pres. construction (what does quality work look like?)

Reasoning/Skills:

#3 - I can describe observations of masses affect (orbit, position) on gravitational interaction. #4 I can model (physically or virtually) the effects of objects mass on gravitational interactions.

#5 I can interpret data to determine how mass affects gravity.

Products:

#6 I can construct & present an argument to support the claim that gravitational interactions depend on masses of interacting objects.

I needs to be further broken down.

Example Activity

planet simulations → See Exploring Gravitation

simulation → NIV solar system or GravityHaven Babylon

6. List any misconceptions or incomplete thinking students might have about the learning that must take place to complete the intent of the PE.
 - students may have difficulty understanding that objects pull on the earth just as hard as the earth pulls on the moon.
7. List some examples of formative questions you might use to gauge student comprehension and guide instruction.
 - what are gravitational attractions? examples? how does mass affect attraction?
 - if you change the mass of body 1, how does it affect body 2 & 3?
 - what evidence do you have to show that mass affects grav. attraction?
 - what other models could you develop to show this?
8. Discuss with your partner(s) the design of an assessment task that could be used to elicit evidence of student mastery of the selected PE. Capture your thoughts about the assessment design in the space below. Then, use poster paper(s) to outline your assessment task and be ready to share with the group. Write the PE designation at the top of the poster papers. Remember to think about the evidence you wish to observe and discuss how that evidence could best be elicited. Must be 3D and congruent to PE.
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See Uleam's #6

Post Question
Why are black holes black?

→ Students would then research high interest topic.

→ Create - claim

Evidence.

Reasoning

Reluctant

→ Then, go to the presentation part. Have students deliver findings.

11. Share out and Gallery Walk: Examine, photograph, and analyze the assessment tasks posted around the room. Take some ideas with you when you leave today.

10. Reach consensus on a time period for instruction of the necessary learning. (i.e. 1 week, 10 days, etc.)

Time period for instruction: 2 weeks + 1/2 maybe

2 weeks + 1/2 maybe

See back

* more work needed. Will need to find more resources.
 Have them write claim only, then begin work.

3-4	3	Distribute claim, Reasoning, Evidence, Rebuttal sheet & ask "If the sun's mass doubled, how will this affect the orbit of the earth & the moon?"
4-3	#	Distribute Exploring Gravitation handout that goes w/phet my solar system. Review students describing observations of planetary motions. Allow students to work through handout to simulation to see how planetary masses affect gravitational pull.
1, 2, 3	2.	Intro: Show clip about gravitational attraction and masses; also have some background reading to lay foundation for key terms & concepts: grav. attraction, mass (planet/solar system related). Allow students to view various planets orbital motions. Brainstorm words that describe their motion (elliptical, left of, right of, N,S,E,W, rotational, clockwise, counterclockwise) Practice writing observations of objects with various types of motions, & masses to prepare students to discuss this standard simulation upcoming.
I can #	Lesson #	Activity

Example: First students will analyze maps of the Earth to recognize patterns of Earthquake locations then.....

9. Your lessons must reflect the student experiences/learning that the assessment task requires. Now, we can build a plan that incorporates the experiences/learning needed for the task. Discuss and sketch a brief outline of the sequence of instruction to be experienced in order to provide students with the necessary knowledge, reasoning, and skills to complete the assessment task.

<p><u>Activity</u></p> <p>Have students use information (interpret) results to give out the rest of their claim, evidence, reasoning, & rebuttal. Take time to share aloud.</p>	<p>Lesson#</p> <p>6</p>	<p>4 can</p> <p>5</p>
<p>→ Introduce first task: Peer, "Why are black holes black?" * Show motivation video</p> <p>→ Write claim</p> <p>→ Have students begin research regarding any qualitative & quantitative data.</p> <p>Students evidence, reasons & rebuttal.</p>	<p>7</p>	<p>6</p> <p>* Evidence used to be broken down.</p>
<p>→ Distribute a graphic organizer for an oral presentation. Ask students to develop presentation hook, thesis, points, etc. Ask</p>	<p>8</p>	<p>6</p>
<p>Deliver oral presentation on "Why are black holes black?"</p>	<p>9</p>	<p>6</p>
<p>10</p>		

In groups of two or three please complete the following activities:

KVEC Science Teacher Leader Culminating Project



1. Select a Performance Expectation that you will teach early in the coming school year.

Grade Band/Level: 7

PE: LS1-3

2. List the SEP, DCI and CCC that the performance expectation contains.

SEP: Oral written argument supported by evidence to refute or explain a phenomenon
DCI: LS1.A - Structure + Function - Bullet 3
CCC: Systems + System Models, Science is a human Endeavor

3. List the connections to literacy, math and other DCI within the PE.

Literacy: SL.4.5, SL.4.6, SL.4.7, SL.4.8, SL.4.9, SL.4.10, SL.4.11, SL.4.12, SL.4.13, SL.4.14, SL.4.15, SL.4.16, SL.4.17, SL.4.18, SL.4.19, SL.4.20, SL.4.21, SL.4.22, SL.4.23, SL.4.24, SL.4.25, SL.4.26, SL.4.27, SL.4.28, SL.4.29, SL.4.30, SL.4.31, SL.4.32, SL.4.33, SL.4.34, SL.4.35, SL.4.36, SL.4.37, SL.4.38, SL.4.39, SL.4.40, SL.4.41, SL.4.42, SL.4.43, SL.4.44, SL.4.45, SL.4.46, SL.4.47, SL.4.48, SL.4.49, SL.4.50, SL.4.51, SL.4.52, SL.4.53, SL.4.54, SL.4.55, SL.4.56, SL.4.57, SL.4.58, SL.4.59, SL.4.60, SL.4.61, SL.4.62, SL.4.63, SL.4.64, SL.4.65, SL.4.66, SL.4.67, SL.4.68, SL.4.69, SL.4.70, SL.4.71, SL.4.72, SL.4.73, SL.4.74, SL.4.75, SL.4.76, SL.4.77, SL.4.78, SL.4.79, SL.4.80, SL.4.81, SL.4.82, SL.4.83, SL.4.84, SL.4.85, SL.4.86, SL.4.87, SL.4.88, SL.4.89, SL.4.90, SL.4.91, SL.4.92, SL.4.93, SL.4.94, SL.4.95, SL.4.96, SL.4.97, SL.4.98, SL.4.99, SL.4.100
Math: 6.EE.C.9
Other DCI: MS.LS3.A (07-81-2)

4. Use the Framework, your KCAS, the accompanying appendices, and the intent protocol or dissection guide to reach a consensus with your partner(s) on the intent of the PE.

Thoughts on intent:

Make an oral and written argument to support or/and refute, with evidence, how the body interacts with particular body functions, organs, and systems.

5. Deconstruct the PE to list student friendly knowledge, reasoning/skill, and product targets.

Knowledge:

In Multicellular Organisms the body is a system of multiple, interacting subsystems. These subsystems are groups of cells that work together to form tissues + organs that ~~function~~ are specialized for particular body functions.

Reasoning/Skills:

Body Systems
Levels of Organization
Skills from ELA/Literacy, Math.

Products:

Written or Oral Argument

6. List any misconceptions or incomplete thinking students might have about the learning that must take place to complete the intent of the PE.

That systems can't operate in isolation.

7. List some examples of formative questions you might use to gauge student comprehension and guide instruction.

Probes - Misconceptions

Exit slip explaining ~~the~~ imp. function

Draw/Flowchart your system

Summarize

Peer Teaching

Mastery feedback / Turnaround Boards/etc.

8. Discuss with your partner(s) the design of an assessment task that could be used to elicit evidence of student mastery of the selected PE. Capture your thoughts about the assessment design in the space below. Then, use poster paper(s) to outline your assessment task and be ready to share with the group. Write the PE designation at the top of the poster papers. Remember to think about the evidence you wish to observe and discuss how that evidence could best be elicited. Must be 3D and congruent to PE.

Time Period → 2-3 weeks.

- Assuming that LSI-1 + LSI-2 have previously been covered. This unit focuses on Imp. of Body Systems.

• LDC module to tie the topic of systems to reading/writing using mini tasks that focus on the reading process + to transitioning reading to writing.

Guided

Peer Speed Teaching where students are learning from + critiquing peers.

Individualized research

Student created rubrics

Oral Presentation / Debate.

9. Your lessons must reflect the student experiences/learning that the assessment task requires. Now, we can build a plan that incorporates the experiences/learning needed for the task. Discuss and sketch a brief outline of the sequence of instruction to be experienced in order to provide students with the necessary knowledge, reasoning, and skills to complete the assessment task.

Example:

First students will analyze maps of the Earth to recognize patterns of Earthquake locations then.....

10. Reach consensus on a time period for instruction of the necessary learning. (i.e. 1 week, 10 days, etc.)

Time period for instruction: _____

11. Share out and Gallery Walk: Examine, photograph, and analyze the assessment tasks posted around the room. Take some ideas with you when you leave today.

In groups of two or three please complete the following activities:

KVEC Science Teacher Leader Culminating Project



A.K C.F

1. Select a Performance Expectation that you will teach early in the coming school year.

Grade Band/Level: Middle School/7th

PE: 07-LS1-1

2. List the SEP, DCI and CCC that the performance expectation contains.

SEP: Planning and Carrying Out Investigations

DCI: LS1.A: Structure and Function

CCC: Scale, Proportion, and Quantity

3. List the connections to literacy, math and other DCI within the PE.

Literacy: WHST 6-8.7

Math: 6.EE.C.9

Other DCI: MS.LS3.A (07-LS1-2)

4. Use the Framework, your KCAS, the accompanying appendices, and the intent protocol or dissection guide to reach a consensus with your partner(s) on the intent of the PE.

Thoughts on intent:

Students will realize that living things are made of cells. Distinguish between living and non-living things. Realize that living things are made of a variety of cells. Living things may be made of one or more (many) cells.

5. Deconstruct the PE to list student friendly knowledge, reasoning/skill, and product targets.

Knowledge:

- all living things are made of cells
- can be one or many cells
- variety of cells

Reasoning/Skills:

Use an investigation to supply evidence of the above knowledge

Products:

• Students prepared microscope slides

• written evidence to demonstrate knowledge

• graphs/charts comparing cells/number of cells in various organisms

• Students will develop a 3D model of a plant cell and animal cell providing evidence to support the use of materials for each cell structure. Students will also complete stations in which they will identify each object as living or non-living, using the characteristics of living things to support their decision.

discuss how that evidence could best be elicited. Must be 3D and congruent to PE.

designation at the top of the poster papers. Remember to think about the evidence you wish to observe and

use poster paper(s) to outline your assessment task and be ready to share with the group. Write the PE

mastery of the selected PE. Capture your thoughts about the assessment design in the space below. Then,

8. Discuss with your partner(s) the design of an assessment task that could be used to elicit evidence of student

- How can we identify what is living vs. non-living?
- Which two kinds of cells looked most like each other?
- Which two kinds of cells looked least like each other?
- Why is it difficult to diagram a typical plant/animal cell?
- How many cells do you think are in a large organism?
- What evidence is needed to decide if a virus is a cell?

7. List some examples of formative questions you might use to gauge student comprehension and guide instruction.

- Bigger animals/plants have bigger cells
- cells are 2D
- Organisms grow bigger when their cells grow bigger

6. List any misconceptions or incomplete thinking students might have about the learning that must take place to complete the intent of the PE.

In groups of two or three please complete the following activities:

KVEC Science Teacher Leader Culminating Project



1. Select a Performance Expectation that you will teach early in the coming school year.

Grade Band/Level: MS / 7 PE: 07-LS1-1

2. List the SEP, DCI and CCC that the performance expectation contains.

SEP: Planning and Carrying Out Investigations

DCI: LS1.A: Structure and Function

CCC Scale, Proportion, and Quantity

3. List the connections to literacy, math and other DCI within the PE.

Literacy: WHST 6-8.7

Math: 6.EE.C.9

Other DCI: MS.LS3.A (07-LS1-2)

4. Use the Framework, your KCAS, the accompanying appendices, and the intent protocol or dissection guide to reach a consensus with your partner(s) on the intent of the PE.

Thoughts on intent:

Students will realize that living things are made of cells. Distinguish between living and non-living things.

Realize that living things are made of a variety of cells. Living things may be made of one or many cells.

5. Deconstruct the PE to list student friendly knowledge, reasoning/skill, and product targets.

Knowledge:

• all living things are made of cells

• can be one or many cells

• variety of cells

Reasoning/Skills:

- Use an investigation to supply evidence of the above knowledge

Products:

• student prepared microscope slides

• written evidence to demonstrate knowledge

• graphs/charts comparing cells/number of cells in various organisms

6. List any misconceptions or incomplete thinking students might have about the learning that must take place to complete the intent of the PE.

- Bigger Animals/plants ^{organisms} have bigger cells.
- Cells are 2D.
- Organisms grow bigger when their cells grow bigger.

7. List some examples of formative questions you might use to gauge student comprehension and guide instruction.

- How can we identify what is living vs. nonliving?
- Which 2 kinds of cells looked most like each other?
- Which 2 kinds of cells looked least like each other?
- Why is it difficult to diagram a typical plant/animal cell?
- How many cells do you think are in a large organism?
- What evidence is needed to decide if a virus is a cell?

8. Discuss with your partner(s) the design of an assessment task that could be used to elicit evidence of student mastery of the selected PE. Capture your thoughts about the assessment design in the space below. Then, use poster paper(s) to outline your assessment task and be ready to share with the group. Write the PE designation at the top of the poster papers. Remember to think about the evidence you wish to observe and discuss how that evidence could best be elicited. Must be 3D and congruent to PE.

- Students will develop a 3D model of a plant cell and animal cell providing evidence to support the use of materials for each cell structure. Students will also complete stations in which they will identify each object as living or nonliving, using the characteristics of living things to support their decision.

NR - MS

KVCC Science Teacher Leader Culminating Project



In groups of two or three please complete the following activities:

1. Select a Performance Expectation that you will teach early in the coming school year.

Grade Band/Level: 06 PE: 06-ESS2-1

2. List the SEP, DCI and CCC that the performance expectation contains.

SEP: Develop and use a model
DCI: ESS2.A: Earth's materials and systems
CCC: Stability and change

3. List the connections to literacy, math and other DCI within the PE.

Literacy: WHST.6-8.9 SL.8.5

Math: N/A

Other DCI: MS.PS1.A, MS.PS1.B, MS.PS1.C, MS.ESS3.A, MS.ESS3.B, MS.ESS3.C, MS.ESS3.D, MS.PS1.B, MS.PS1.C, MS.ESS3.A, MS.ESS3.B, MS.ESS3.C, MS.ESS3.D

4. Use the Framework, your KCAS, the accompanying appendices, and the intent protocol or dissection guide to reach a consensus with your partner(s) on the intent of the PE.

Thoughts on intent:

Develop a model to help describe unobservable mechanisms because it's difficult to see within our lives how the Earth changes. This PE is a broad concept leading to an understanding that matter changes and so does the Earth as a result of energy transfer.

5. Deconstruct the PE to list student friendly knowledge, reasoning/skill, and product targets.

Knowledge:

- identify the sources of energy that drive the rock cycle.
- define the components of the rock cycle.

Reasoning/Skills:

- describe how energy is transferred through the system.
- explain the changes that occur in the geological components of Earth.

Products:

- develop a model to describe the cycling of matter + energy in the geosphere.

- Explanation of how these changes over time
- Understanding of how energy flows
- Understanding of how material cycles
- Rubric - Evidence looking for:
 - + processes happen at different scales.

A (Any) model that shows the cycling of Earth's materials and the flow of energy that drives it.

- can be 3D, drawings, simulations, words, etc.

discuss how that evidence could best be elicited. Must be 3D and congruent to PE.

designation at the top of the poster papers. Remember to think about the evidence you wish to observe and use poster paper(s) to outline your assessment task and be ready to share with the group. Write the PE mastery of the selected PE. Capture your thoughts about the assessment design in the space below. Then, Discuss with your partner(s) the design of an assessment task that could be used to elicit evidence of student

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○

- How can energy from sun affect the changes in the rocks?
- How does the cycling of thermal energy inside cause changes?
- What processes result in changes in the matter of Earth?
- What are the differences between minerals + rocks?

7. List some examples of formative questions you might use to gauge student comprehension and guide instruction.

- When rock melts its destroyed (matter disappears)
- Don't understand the cycling / changes that can occur
- Rocks are unchanging
- Time scale of the cycle

6. List any misconceptions or incomplete thinking students might have about the learning that must take place to complete the intent of the PE.

11. Share out and Gallery Walk: Examine, photograph, and analyze the assessment tasks posted around the room. Take some ideas with you when you leave today.

10. Reach consensus on a time period for instruction of the necessary learning. (i.e. 1 week, 10 days, etc.)
Time period for instruction: 12 days

Students will develop an explanation through observation on how the sun drives the weather + weathering of the Earth.
Students will model convection currents

Students will identify the components of the Rock cycle.
Students will model the formation of different rocks

Example:
First students will analyze maps of the Earth to recognize patterns of Earthquake locations then.....

9. Your lessons must reflect the student experiences/learning that the assessment task requires. Now, we can build a plan that incorporates the experiences/learning needed for the task. Discuss and sketch a brief outline of the sequence of instruction to be experienced in order to provide students with the necessary knowledge, reasoning, and skills to complete the assessment task.