

CREATIVITY, INSPIRATION AND INNOVATION (CII)

Week 5: Creative Problem Solving - The Learner's Model

STAGE 1: DESIRED RESULTS

Curriculum Frameworks & Standards

#1: *21st Century Student Expectations for Student Learning*

Key Ideas

#2: *21st Century Student Expectation for Student Learning*

Development of Creative Thinking and Problem Solving

#2: *21st Century Student Expectations for Student Learning*

Development of Critical & Analytic Thinking

Enduring Understandings

Creative Problem Solving Process involves divergent and convergent thinking, facilitates creativity, the generation of new ideas, and CPS can be applied to everyday concerns or wide scale problems.

Essential Questions

How can divergent and convergent thinking be integrated throughout the CPS process?

Content

Student will know...

- the difference between divergent and convergent thinking.
- the guidelines for convergent thinking.
- how to use convergent thinking to focus on options.

Skills

Students will be able to...

- generate questions to inspire divergent and convergent thinking as part of the Creative Problem Solving Process.
- demonstrate the Creative Problem Solving process through guided prompts.

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STAGE 2: ASSESSMENT EVIDENCE

FINAL ASSESSMENT for Week 5 - CPS Process

Part I:

Evidence of mastery of divergent and convergent thinking will be collected through a series of guided prompts requiring the students to arrive at an action plan.

Part II:

Evidence that the student understands that the CPS method can be applied to everyday concerns or wide scale problems will be assessed through a written reflection.

ASSESSMENT Guided Prompts:

Instructor guides student through the following prompts.

If you could have one superpower what would it be?

Step 1. CLARIFY - Explore the Vision

develop your wish using divergent and convergent thinking.

DIVERGE (2 min.) - Students make a list of all possible superpowers.

REFLECTION (3 minutes): What did you do to generate your list. Explain where some of your ideas came from. What connections did you make?

CONVERGE (1 min.) - Select top three superpowers then first choice.

Highlight your top three choices and list them.

Of the three you selected which superpower would you choose.

REFLECTION (5 min.) Explain how you narrowed your selection. What was your thought process? Discuss in detail how you eliminated two of the top three superpowers and ended with your final selection.

STEP 2: CLARIFY - Gather Data

Gather information to obtain a clear understanding of having your particular superpower.

DIVERGE (4 min) In four minutes answer the following questions.

Why do you want this superpower?	What are the advantages? ●	What are the disadvantages?
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CONVERGE (1 minute) Use a highlighter and select the responses that you think have the strongest influence on your life.

REFLECTION (3 minutes) From what you selected, what do you think will be the consequences of this superpower in your life?

STEP 3: CLARIFY - Formulate the Challenge

DIVERGE (4 min.) Examine your superpower from as many perspectives as you can. Rephrase your superpower as a question (How might I..)

CONVERGE (1 min.)

Select the one question above that you want to spend time researching and addressing?

Step 4: IDEATE - Generate/Explore ideas

The goal here is to generate answers to the challenge question.

DIVERGE (5 min.) - Come up with as many ways to answer the question as you can.

CONVERGE (2 min.) - Examine your list above and select the idea(s) that you can do or that you think will be innovative

Step 5: Formulate Solutions - Devise a solution to your question.

DIVERGE (2 min.) - Create a list of options to improve the idea. What are the strengths and possible roadblocks.

PPCO - What are the Pluses, Potentials, Concerns, Overcome concerns?

CONVERGE (2 min.) - Select the best option and generate a clear action statement.

REFLECTION (3 min.) - Look back at your original superpower desire. How does your original superpower desire relate to the action statement you just created? How do you feel about the direction your goal has gone.

Step 6: Formulate a plan

DIVERGE (3 min.) - Think about possible resources and action steps that will move you towards and block you from achieving your goal.

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CONVERGE (2 min.) - List the steps and create a plan for action. Include Who, What, When, Where, Why and How the plan will go into action

REFLECTION (5 min.)

Examine your action plan is it a SMART (Specific, Measurable, Attainable, Realistic, Time bound) plan? Would you be able to make this happen? If not how could you modify the plan so that you could make it work?

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STAGE 3: LEARNING ACTIVITIES

DAY 1

Lesson Objective:

Demonstrate the CPS process and the use of divergent and convergent thinking to develop a plan of action.

Activities:

Warm-up: Display a lateral thinking problem for students to work on as they settle into class. Give students 3 minutes then ask for answers and for students to describe how they came up with their solution.

Primary: Interview the Wolf Exercise

Wrap-up: Reflection

Resources:

- Lateral Thinking Question cards
- Flip chart paper
- Markers

Assessment:

Students reflect on their observations:

- What did you discover about the wolf that you did not anticipate?
- Describe the questioning. How can you see this type of questioning process working in problems you might have in your life?

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DAY 2

Lesson Objective:

Introduce and practice the 5 convergent thinking guidelines and practice convergent thinking with “dot voting”.

Activities:

Warm-up: Display a visual challenge for students to attempt as they settle into class. Don't provide the answer until the end of class.

Primary: Review activity from previous day. Explain how the dot voting allowed the ideas to be narrowed down and that this is called “convergent thinking”. Explain the guidelines for convergent thinking. Explain the 5 convergent thinking guidelines:

1. Be Deliberate
2. Check Your Objectives
3. Improve Your Ideas
4. Be Affirmative
5. Consider Novelty

Refer to the visual challenge displayed as students came into class, have students write their responses on large “sticky” notes. Then students place their answers on the wall or on flip chart paper. Organize common responses together. Then have students write down their first choice. Remind them to consider the 5 convergent thinking guidelines. Finally they place a “sticky dot” or marks on their top choice.

Discuss the results.

Wrap-up: Ask the students to reflect on the “Dot Voting” activity. Use the “What”, “So What”, During the “So What” guide students to be mindful of the 5 convergent thinking strategies and how those influenced the decision making. “Now What” prompt. *What* did I do? *So What* did I learn from the activity? *Now What* can I do with what I learned?

Resources:

- Lateral Thinking Question cards
- Flip chart paper
- Markers
- Have convergent thinking guidelines posted

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DAY 3

Lesson Objective:

Convergent thinking practice with the “3 I’s tool”.

Activities:

Warm-up: Display a “Quick Think” on the board for student to respond to as they come into class. Ask students to write down the 5 convergent thinking guidelines. Give them 3 minutes then review with the class. Review how these were/were not used in the dot voting exercise from the day before.

Primary: Explain the “3 I’s tool” and how it helps evaluate ideas.

1. Do you have INFLUENCE?
2. Is it IMPORTANT to you?
3. Does it require IMAGINATION?

Pose a problem that students can relate to and have them DIVERGE to create possible solutions. Then have student practice the “3 I’s tool” to evaluate the list.

Wrap-up: Discuss with the class the solutions they selected and how the “3 I’s tool” helped with the process.

Have students reflect in their journals on how the “3 I’s tool” helped converge.

Resources:

- Student journals

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DAY 4

Lesson Objective:

Convergent thinking practice with the "Evaluation Matrix".

Activities:

Warm-up: Display a visual challenge for students to contemplate as they come into the classroom.

"Quick Think" Have students write down the "3 I's" from the day before and as a bonus write down as many of the 5 convergent thinking guidelines as they can remember.

Review with the class.

Primary: Explain the "Evaluation Matrix" and how it helps evaluate ideas.

From the problem solutions generated the previous day, select the top two by way of "dot voting".

Demonstrate with these two options how to use the "Evaluation Matrix".

Discuss with the class which solution looks the most viable based on the results in the "Evaluation Matrix".

Wrap-up: Students reflect on their results in their journal.

Resources:

- Student journals

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DAY 5

Assessment