

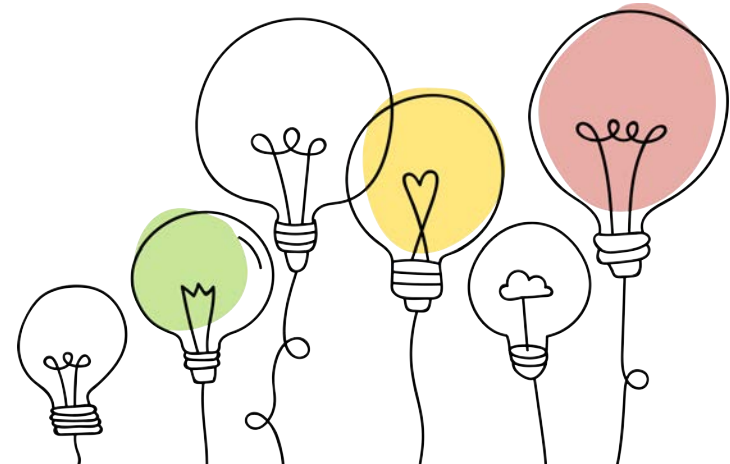
# Powerful Problem Solving

June 2019



**Jen Cornett**

Gifted Education Specialist  
jcornett@mdek12.org



## VISION

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To create a world-class educational system that gives students the knowledge and skills to be successful in college and the workforce, and to flourish as parents and citizens

## MISSION

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To provide leadership through the development of policy and accountability systems so that all students are prepared to compete in the global community

MISSISSIPPI STATE BOARD OF EDUCATION  
**STRATEGIC PLAN GOALS**

1

All  
Students  
Proficient  
and Showing  
Growth in All  
Assessed  
Areas



2

Every  
Student  
Graduates  
from High  
School and  
is Ready for  
College and  
Career



3

Every  
Child Has  
Access  
to a High-  
Quality Early  
Childhood  
Program



4

Every  
School Has  
Effective  
Teachers and  
Leaders



5

Every  
Community  
Effectively  
Uses a  
World-Class  
Data System  
to Improve  
Student  
Outcomes



6

Every  
School and  
District is  
Rated “C” or  
Higher





PANTS ON FIRE

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## Listening & Information Literacy Skills



MISSISSIPPI  
DEPARTMENT OF  
EDUCATION

Ensuring a bright future for every child

**Melissa Banks**

[mebanks@mdek12.org](mailto:mebanks@mdek12.org)

Instructional Technology Specialist (K-12)

*Office of Elementary Education and Reading*

*Local school districts have discretion over which technology partners and products are utilized in their districts. For legal advice regarding technology services, please contact your local school board attorney.*

# LISTENING

## Communication Skills

- Demonstrate effective listening behaviors
- Identify the purpose, content, organization, and delivery of oral communication and evaluate based upon preset criteria



# INFORMATION LITERACY

Given a real situation, the student will identify and define the problem, design a research plan appropriate to the problem, conduct the investigation, decide on the most appropriate media for dissemination of the findings/solutions, and present the results before an authentic audience.



# INFORMATION LITERACY

[tinyurl.com/y8bafvr5](https://tinyurl.com/y8bafvr5)





# RESEARCH

# Gather Research

- Teacher-approved resources IL 2.4
- Assemble information IL 2.5
- Employ various digital media tools to locate and collect accurate and reliable information IL 3.3

# ANALYZE SOURCES



# Analyze Sources

- Interpret and evaluate information IL 3.5
- Analyze primary sources IL 5.1
- Utilize primary and secondary sources to provide new knowledge or understanding IL 5.2
- Based upon data gathered through research, infer future trends, directions, similarities, and differences IL MS 5

# VALIDITY & RELIABILITY



# Evaluate Sources

- Interpret and evaluate information IL 3.5
- Define and identify use of propaganda techniques IL 5.3
- Assess the validity, reliability, and relevance of information IL 5.4
- Critical analysis and evaluation of information IL MS 4

# POINT OF VIEW



# Evaluate Point of View

- Interpret and evaluate information IL 3.5
- Understand hidden agendas by critical analysis and evaluation IL MS 5



# INTERVIEWS & SURVEYS



# Effective Surveys

- Assemble information by conducting interviews IL 3.2
- Assemble information by utilizing effective survey techniques IL 4.2

# CREATE VISUALS



# Visually Organize Info

- Create and visually organize information using maps, webs, chronological order, sequence, or compare/contrast IL 3.4
- Create and visually organize information using charts, tables, graphs, evidence, or patterns IL 4.3



PANTS ON FIRE

<http://www.pantsonfire.pizza/>





# PANTS ON FIRE

In a time where everyone lays claim to the truth, kids should know where they stand. And what better way to test their lie-detecting skills than a game show that puts kids in the driver's seat, adults on the hot seat, and straps a sound-effects robot to the roof? Each week, a kid interviews two experts in a particular topic—one, a genuine, credentialed expert, the other a low-down dirty liar. Hilarious and fast-paced, the show encourages kids to teach themselves how to ask insightful questions, weigh the evidence before them, and when to trust their gut.



PANTS ON FIRE

- Listening Skills
- Information Literacy Skills





PANTS ON FIRE

# Prior knowledge

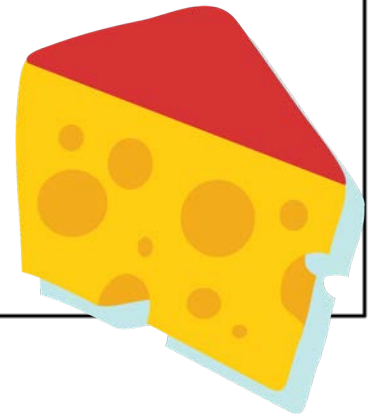




PANTS ON FIRE



WHAT I KNOW





PANTS ON FIRE

# Take notes



# PANTS ON FIRE

## EXPERT #1:



You know these things the expert said are correct



You know these things the expert said are incorrect

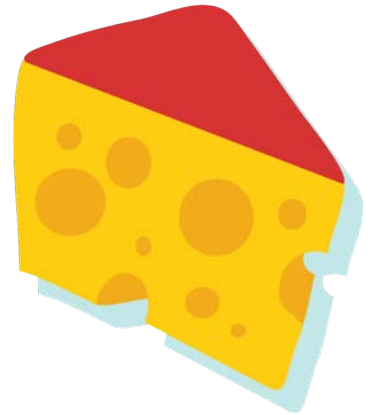


You have questions about these things the expert said -  
**RESEARCH**



PANTS ON FIRE

Let's listen!





PANTS ON FIRE

# Who is the liar?

- Discuss at your table.
- Share out.



PANTS ON FIRE

# Extensions

- Continue the research.
- Create their own graphic organizer.



**Melissa Banks**

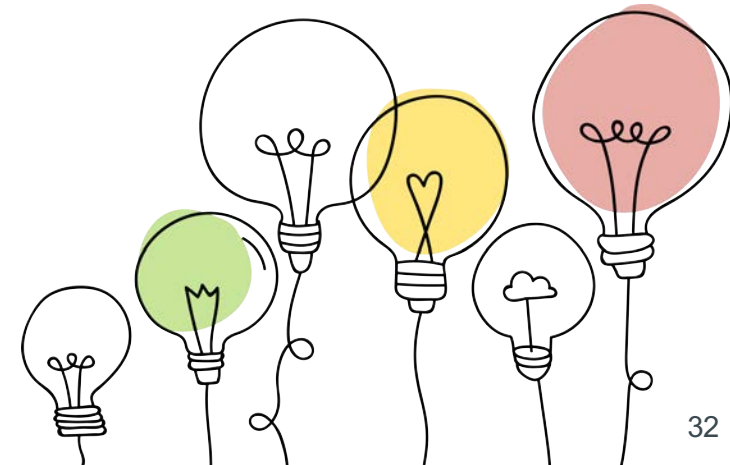
**[mebanks@mdek12.org](mailto:mebanks@mdek12.org)**

Instructional Technology Specialist (K-12)

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# The Case for

# Open Ended Instruction





# Open Ended Instruction

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- Intents and purposes of individuals are uniquely established and pursued.
- Open ended can mean the learning outcomes (goals), the pursuit of learning (means), or both (goals and means).

# Open Ended Instruction

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Learning is most effective when students:

- Encounter
- Share
- Revise

Process

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Product

# Open Ended Instruction

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- **Process** is more critical than generating products.
- **Inquiry** is valued more than acquisition.

# Open Ended Instruction

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**Student inquiry leading to student inference is an essential and non-negotiable part of learning for understanding.**

# Open Ended Instruction

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Why?

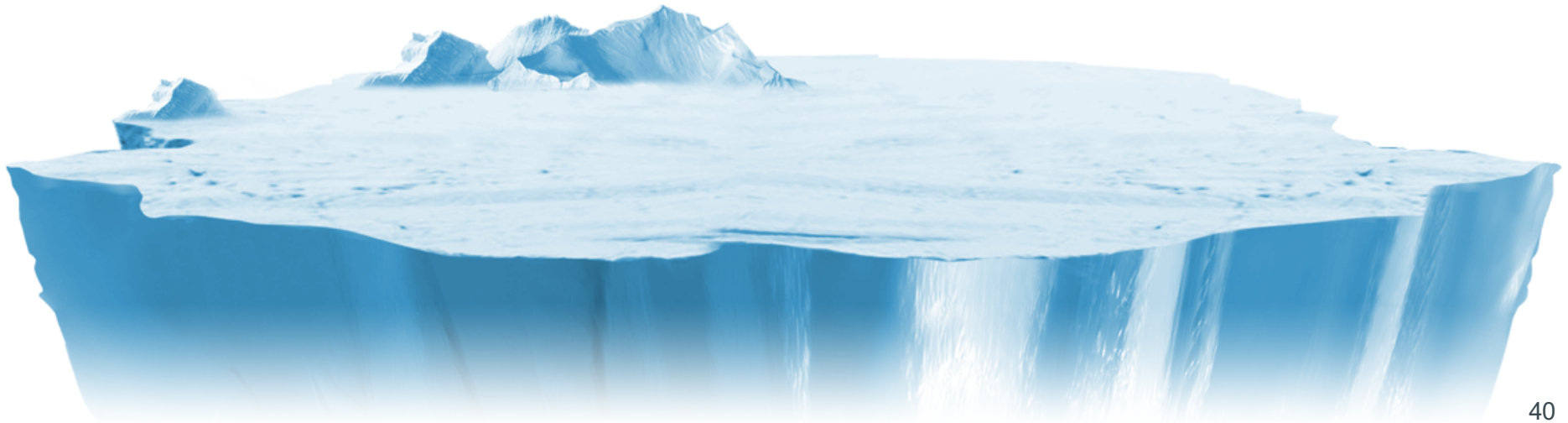
Because **understanding is dependent upon drawing inferences by oneself** – as well as testing and justifying those inferences – if only to question or verify claims made by the teacher, other students, or authors.

# Open Ended Instruction

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Otherwise, it is rote learning with no thinking behind it.

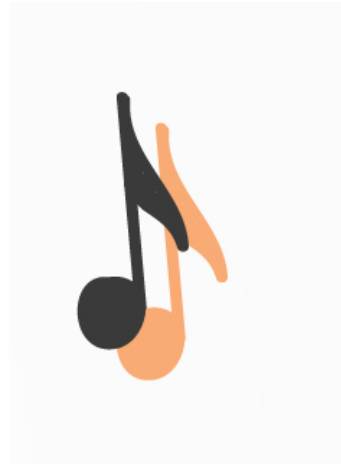
# Break the Ice





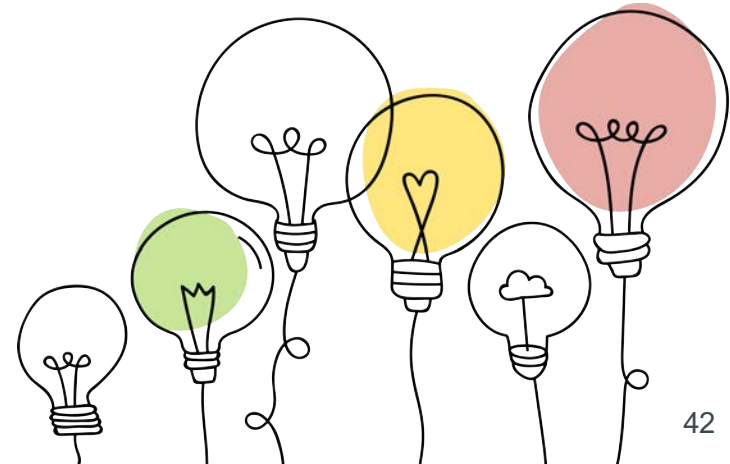
# Break the Ice

- Open the selection
- Complete the tune



# Experience

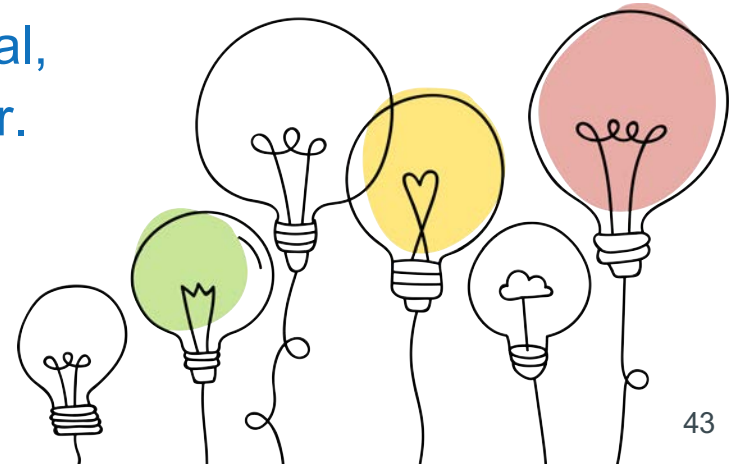
# Problem Solving



# Step 1

# The Problem

Goal: As a group, determine the problem, goal, challenge, or desire that you want to consider.



# Step 1: The Problem

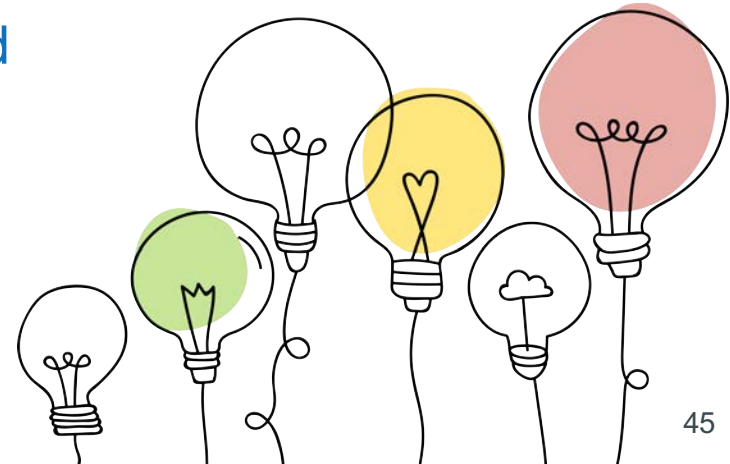
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- You must come to a consensus.
- Once you select a topic, you can pinpoint the focus of the project, but you may not change topics.
- Before moving to step 2, your topic must be approved by the facilitator.

# Step 2

# Clarify

Goal: As a group, determine questions based on your topic, then gather information.

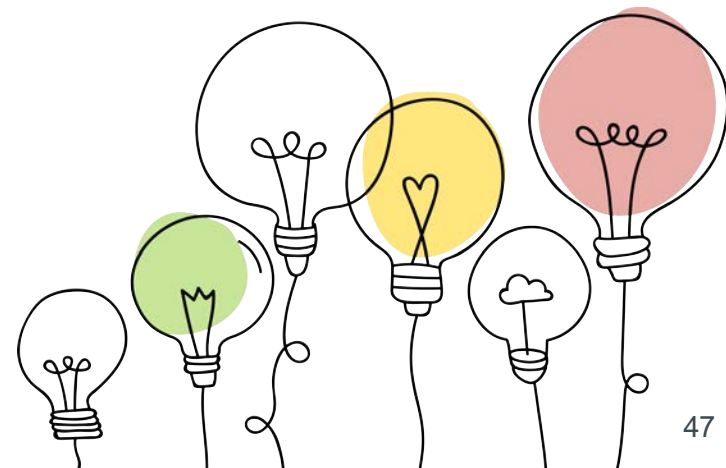


# Step 2: Clarify

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- Create open ended questions based on your topic.
- Identify possible sources. Gather additional information.
- Organize your team so that time and resources are used effectively.

# Questioning Techniques



# Questioning Techniques

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## Questioning Hierarchy

- Start with yes/no questions
- Follow with levels of What/How (WH) Questions



# Questioning Techniques

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## Questioning Hierarchy

Yes/No Question: Are there teachers present?

WH Level 1 – Adds detail: How many teachers are present?

# Questioning Techniques

## Questioning Hierarchy

WH Level 2 – Adds a modifier: What three things do teachers like about summer?

WH Level 3 – Adds choice: What do teachers like and not like about their work?

# Questioning Techniques

## **FIRE** Questions

**F**actual Thinking – Seeks factual information

**I**nsightful Thinking – Seeks the big picture, or idea depth

**R**rational Thinking – Seeks to analyze or idea breadth

**E**valuative Thinking – Seeks to make judgements or connect

# Questioning Techniques

## **FIRE** Questions

**F**actual Thinking – Who, when, where, and how many

**I**nsightful Thinking – What, which, why, how, and what if

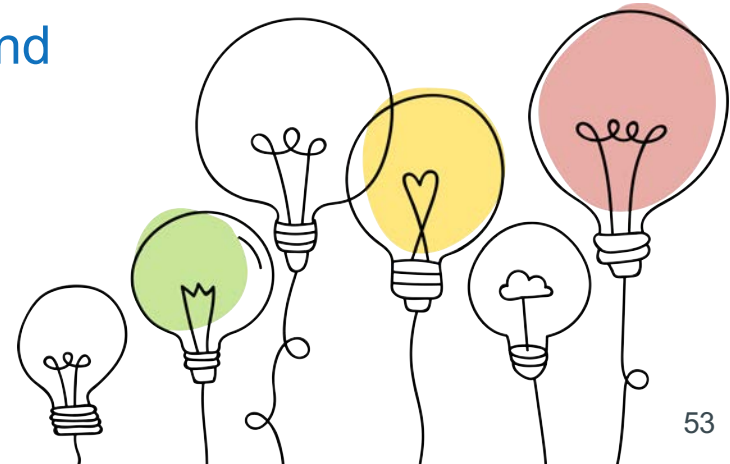
**R**rational Thinking – What, how, what steps

**E**valuative Thinking – What, how and why

# Step 3

# Ideate

Goal: As a group, create a solution based mind map.



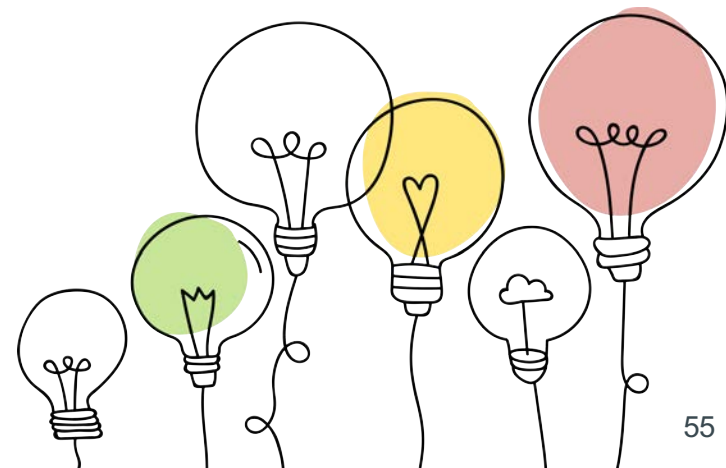
# Step 3: Ideate

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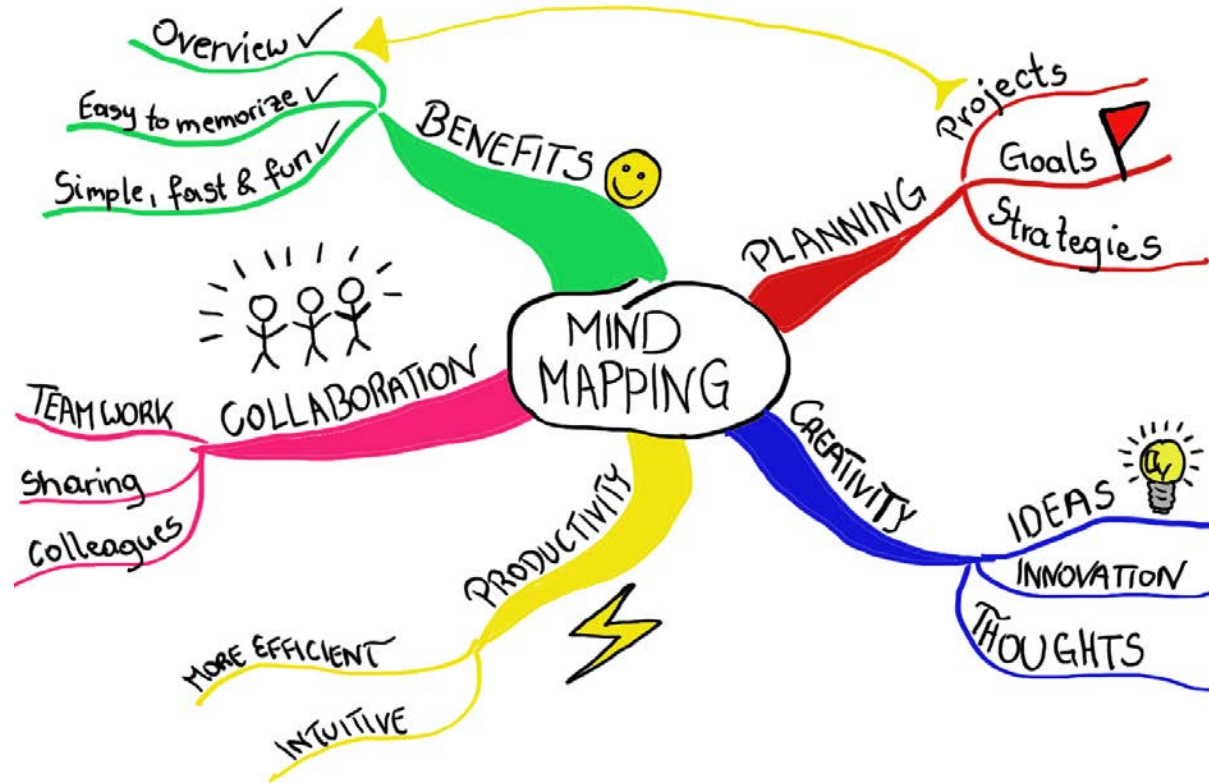
- Select an open-ended question from Step 2.
- Create a mind map to answer the selected question.
- Focus thinking and discussion on solutions.

# Mind

# Maps



# Mind Maps





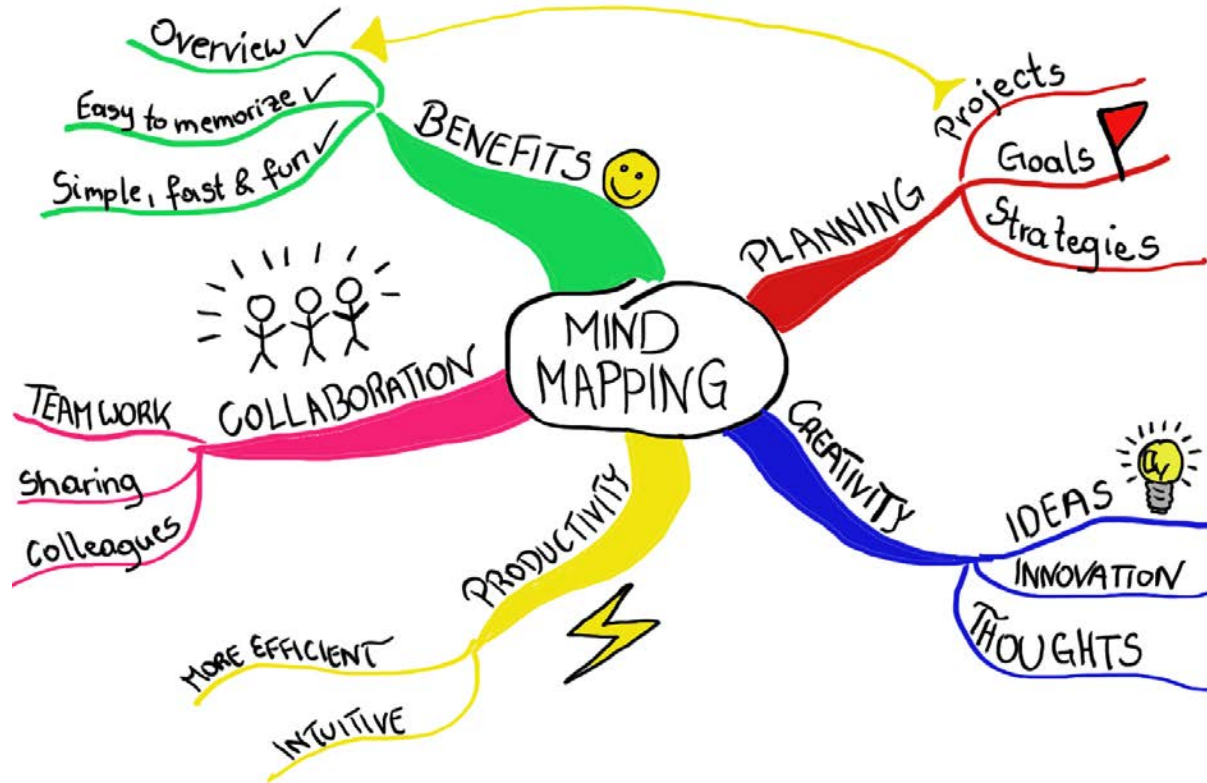
# Mind Maps

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Intro

Example

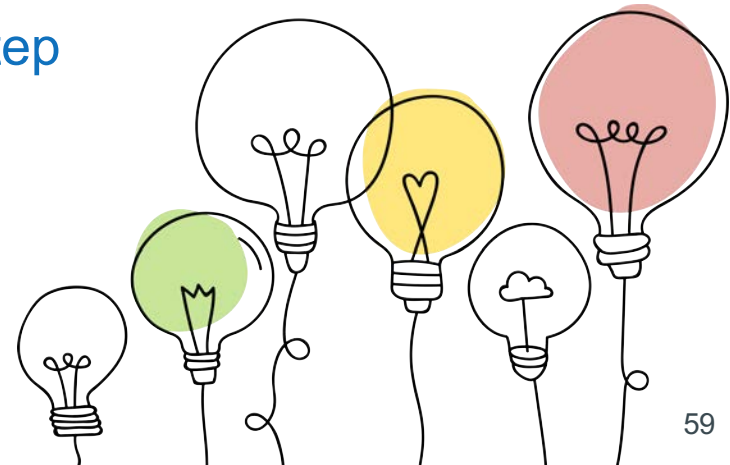
# Mind Maps



# Step 4

# Develop

Goal: Evaluate ideas and/or solutions from step 3, then determine the best idea or solution.



# Step 4: Develop

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→ Create 3 or more questions and evaluate your ideas/solutions.

Examples: Does it meet your needs?

Can it be implemented?

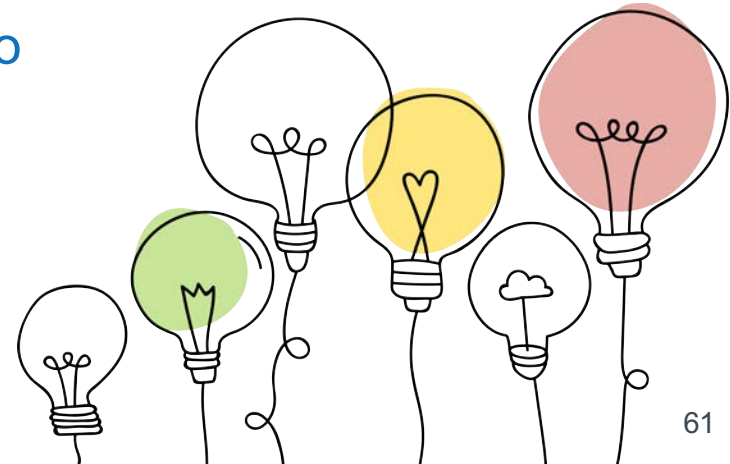
Can you strengthen it?

→ Choose the best solution.

# Step 5

# Implement

Goal: As a group, determine a creative way to share your problem and best solution.



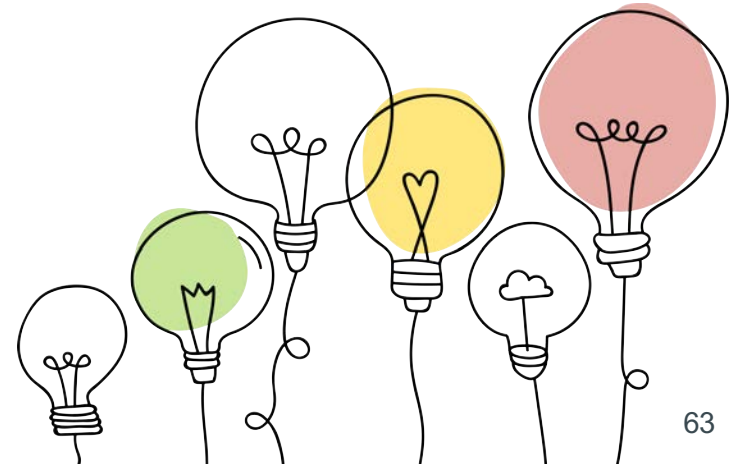
# Step 5: Implement

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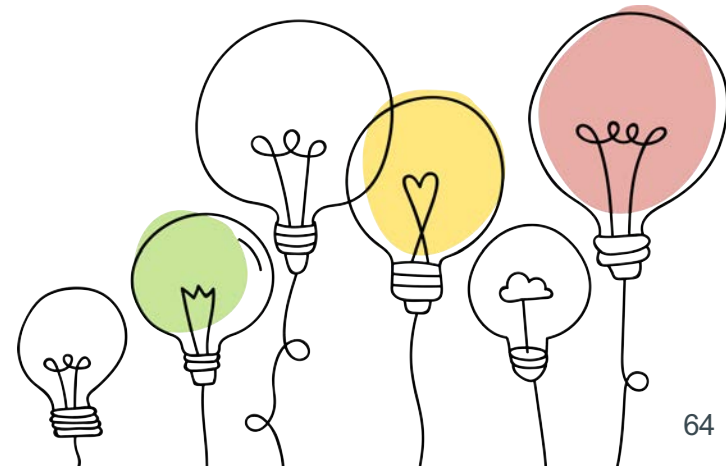
- Create a plan of action.
- List needed resources.
- Communicate your process and plans.
- Collect feedback.

# Project

# Presentations



# Assessment





# Assessment

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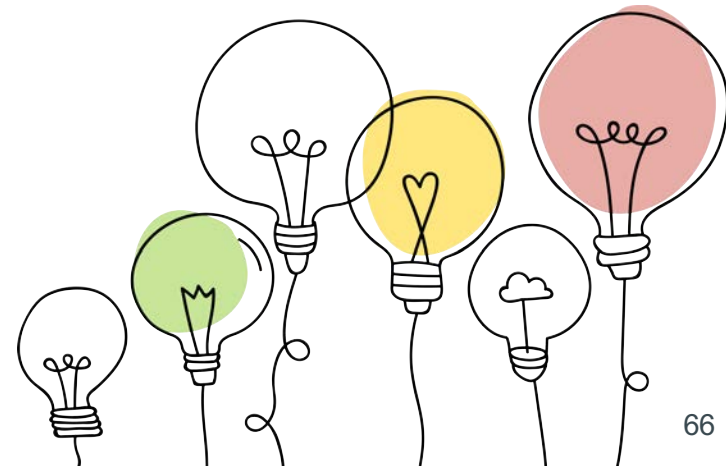
As a group, discuss how you would assess this learning process.

→ Actionable Feedback

→ SMART Goals

Specific, Measurable, Achievable, Relevant, Timely

# Reflections



# Reflections

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- What did you learn?
- Who was responsible for the process?

# Reflections

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- What did you do well?
- What could you have done better?
- What will you change moving forward?

# Reflections

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- Within your classroom, how could use this process to meet the needs of gifted students?
- What strategies could be added to support the process?

# Reflections

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- What changes would need to be made for younger students? Older students?

# Reflections

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- What Outcomes have we addressed?
- How have those Outcomes been implemented?



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[jcornett@mdek12.org](mailto:jcornett@mdek12.org)

601.359.2586

