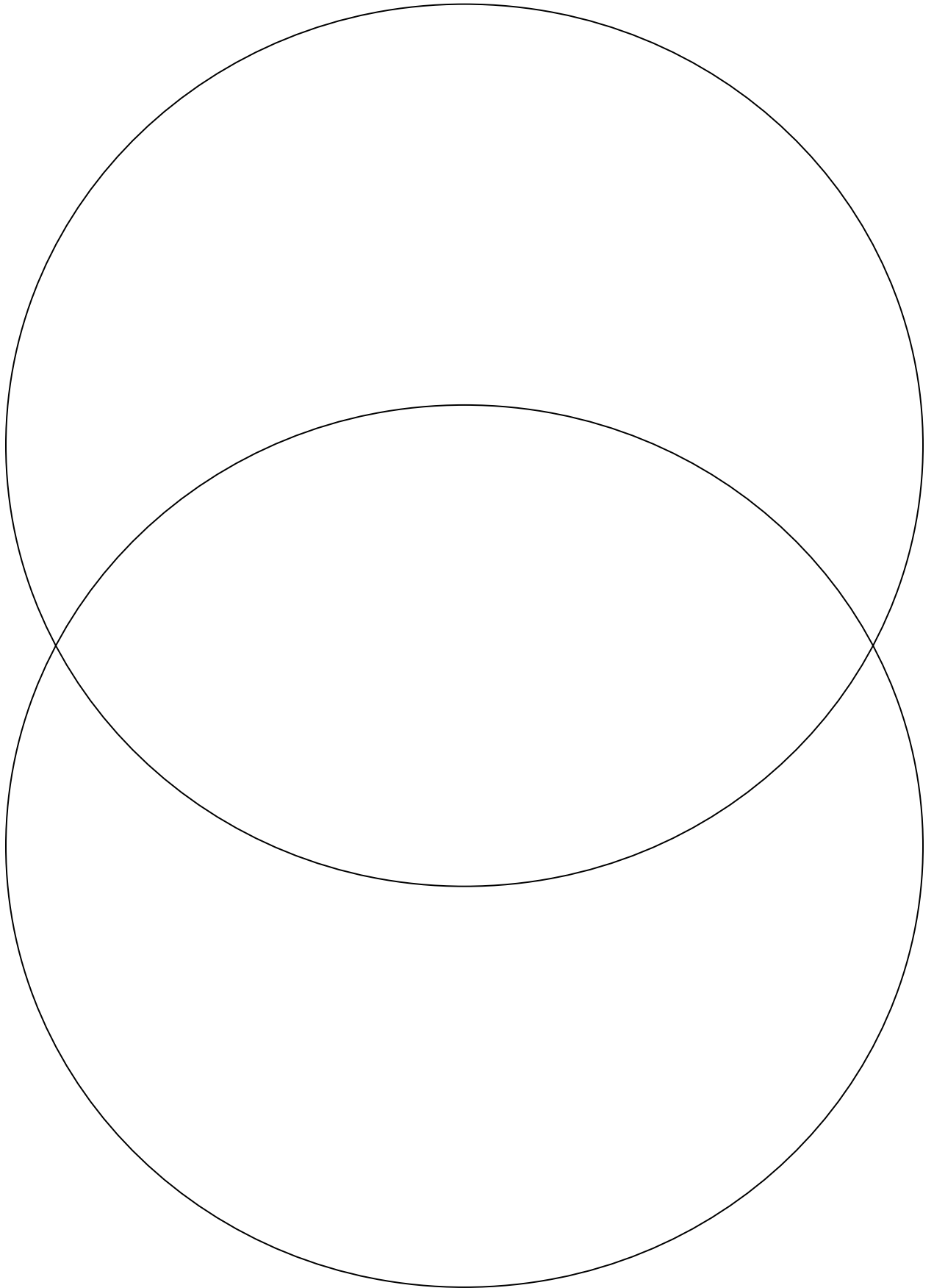**VENN DIAGRAM:** This organizer is a visual tool used to compare two different items. This organizer will show the similarities and differences between the items selected. Often, this tool is used in mathematics to show relationships between sets. In language arts instruction, Venn Diagrams are useful for examining similarities and differences in characters, stories, poems, etc. Frequently this tool is used as a prewriting activity to enable students to organize thoughts or textual quotations prior to writing an essay.
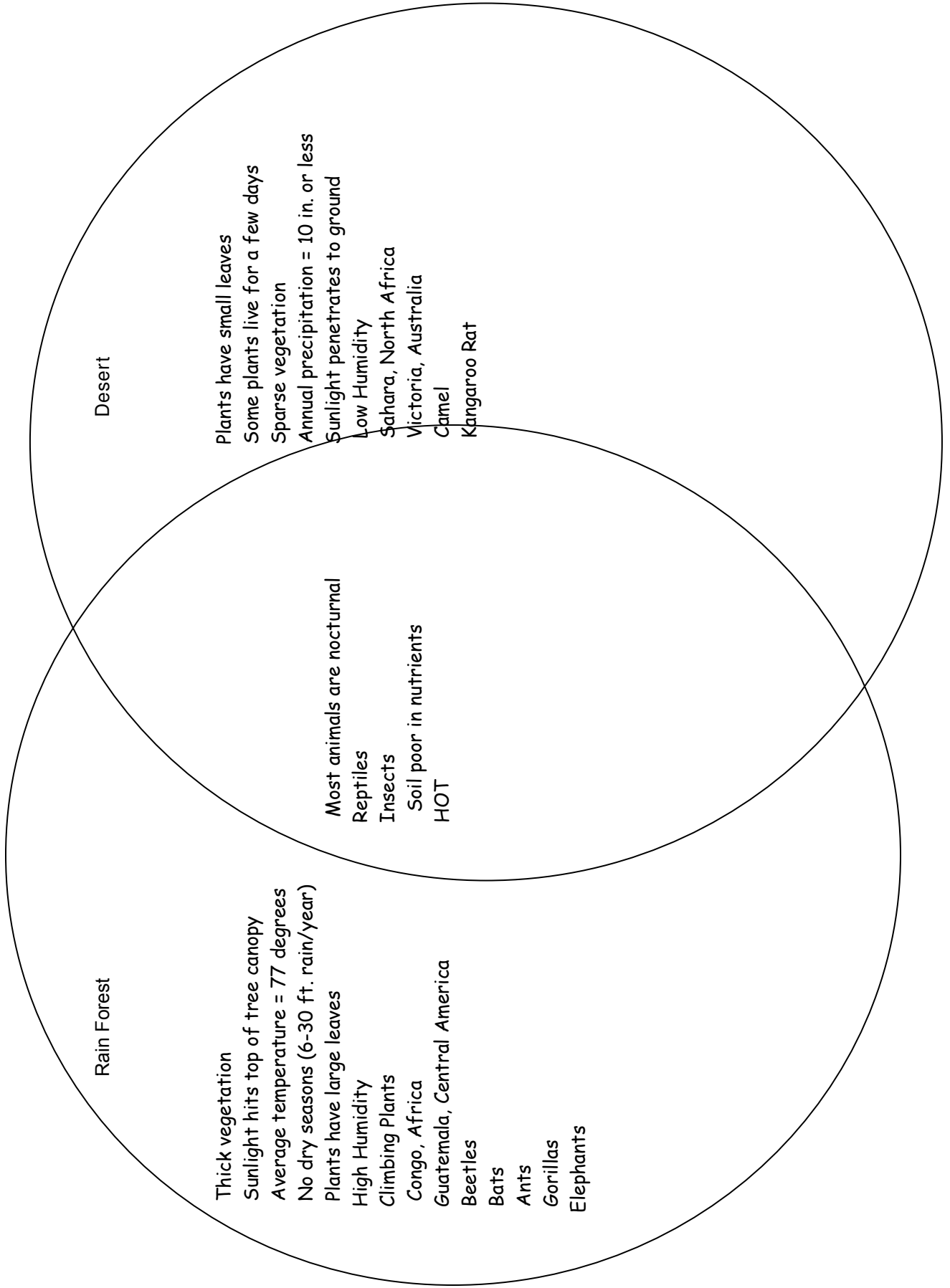
*What do I do?*
- ✓ Select the two items that you want to compare.
- ✓ Label the top of each circle on the graphic organizer with the item selected to be compared.
- ✓ Have students' list characteristics that belong to each item in each circle.
- ✓ Have students list the characteristics that are common to both items inside the intersecting part of the two circles.
- ✓ For students to further expand their content knowledge can complete a progression of Venn diagrams. For example: Diagram 1 could compare the Rain Forest and Desert. Diagram 2 could compare the Amazon Rainforest and the Mojave Desert climates. Diagram 3 could compare the Amazon Rain Forest and the Mojave Desert animals.

# Venn Diagram

# Venn Diagram

## Rain Forest

Thick vegetation
Sunlight hits top of tree canopy
Average temperature = 77 degrees
No dry seasons (6-30 ft. rain/year)
Plants have large leaves
High Humidity
Climbing Plants
Congo, Africa
Guatemala, Central America
Beetles
Bats
Ants
Gorillas
Elephants

## (Overlap)

Most animals are nocturnal
Reptiles
Insects
Soil poor in nutrients
HOT

## Desert

Plants have small leaves
Some plants live for a few days
Sparse vegetation
Annual precipitation = 10 in. or less
Sunlight penetrates to ground
Low Humidity
Sahara, North Africa
Victoria, Australia
Camel
Kangaroo Rat

**COMPARISON ORGANIZER MATRIX:** The main purpose of this tool is to enhance and enrich a student's ability to compare and contrast the knowledge they are learning. The key to effective comparison is to identify the critical characteristics-those that will augment students' understanding of the similarities and differences between the items. The deeper and more finite you make the characteristics to be compared, the deeper the students have to think.

*What do I do?*

- ✓ When students are first learning this model it is best to give them more of the information that they need to complete the task. For example, in the beginning you might identify the items to be compared <u>and</u> the characteristics to use in the comparison.
- ✓ Give each student a comparison organizer form and have them complete the activity. The items to be compared are usually listed across the top of the matrix and the characteristics are usually listed down the left side.
- ✓ Remember to have students write an analysis of their findings based on the similarities and differences.
- ✓ As students become more comfortable with this process, you can give less structure and guidance. You may start by giving them the items to compare and allowing them to decide on the characteristics for comparison. By allowing the students to have more freedom in their choices and become more independent workers.
- ✓ Once you feel students are proficient in the concept, allow them to decide the entire content of their matrix. This will give you better information on whether they totally understand the concept of their intended learning
- ✓ Know that you can use this type of matrix as a formative or summative assessment to determine their detailed understanding of specific items.

# Comparison Organizer

| Characteristics | Items to be Compared | | | | |
|---|---|---|---|---|---|
| | A. | B. | C. | D. | E. |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| Conclusions about Similarities and Differences | | | | | |

# Comparison Organizer

| Characteristics | A | B | C | D | E |
|---|---|---|---|---|---|
| | 1 cm square | 2 cm square | Rectangle: Width 4 cm Length 6 cm | Rectangle: Width 3 cm Length 7 cm | Rectangle: Width 3 cm Length 8 cm |
| 1. Perimeter | 4 cm | 8 cm | 20 cm | 20 cm | 22 cm |
| 2. Area | 1 sq. cm | 4 sq. cm | 24 sq. cm | 21 sq. cm | 24 sq. cm |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| 6. | | | | | |
| Conclusions about Similarities and Differences | Two rectangles can have the same perimeter, but different areas. That also means that a square and a rectangle could have the same perimeter, but different areas. In addition, two rectangles can have the same area but different perimeters. If you double the size of a square, the perimeter doubles, but the area increases 4 times. | | | | |

# CLASSIFICATION ORGANIZER

The purpose of this tool is to get students to look at the same content in many different ways. Classifying is a complex process that involves grouping things into specific categories based on like characteristics. This process gives students a systematic strategy that has rules and expectations that govern category membership. The rules we set for that membership influences our perceptions of the content. When we change the rules, we change our perceptions. Having students design different rules for the same content can influence how a student views and thinks about what they are learning.

## *What do I do?*
- ✓ Determine which graphic organizer you want students to use. The activity will determine whether you want to use a circle organizer or a column organizer.
- ✓ In the beginning, you may need to provide the item(s) to classify as well as several ideas of characteristics or categories they can use. Once students are comfortable with the process, you can allow them to design their own categories. Follow the process below:
  - o Have students select what seems to be an important item, describe its key characteristics, and identify other items that have the same characteristics.
  - o Create the category by specifying the characteristics that the item(s) must have for membership in the category. (How are these things alike?)
  - o Select another item, describe its key characteristics, and identify other items that have the same characteristics.(What other groups can I make?)
  - o Create a second category by specifying the characteristics the items must have for membership in this category. (How are the things in each group alike?)
  - o Repeat these steps until all items are classified and the specific characteristics are identified for membership in each category. (Does everything fit into a group now?)
- ✓ A second classifying activity would be to give students a graphic organizer completely filled out and then ask them to *reclassify* and asking the following questions:
  - o What steps did you take to reclassify the items?
  - o What do you see differently about the items now that you have reclassified them?
  - o What are the benefits of reclassifying? What have you learned?
- ✓ It is always key to have students write their reflections about their learning.

# Classification Organizer

Categories

Items

| | | | | |
|---|---|---|---|---|
| | | | | |

# Classification Organizer

## Categories

| | Art Materials | Art Techniques | Art Processes | |
|---|---|---|---|---|
| **Items** | Paint | Overlapping | Adding in sculpture | |
| | Clay | Shading | Subtracting in sculpture | |
| | Charcoal | Varying Size | Casting jewelry | |
| | Pencil | Varying Color | Constructing jewelry | |
| | | Collage | Mixing color | |
| | | Perspective | | |
| | | Stippling | | |
| | | Glaze | | |

# Classification Organizer:
## Circle template

# Classification Organizer:
## Circle template

Literary Texts

Nonfiction

Speech

John F. Kennedy "Inaugural Address"

Martin Luther King Jr.. "I Have a Dream"

Biography

Bernice Kohn Talking Leaves

Howard Greenfiled "Marc Chagall:An Introduction

Fiction

Science Fiction

Fahrenheit 451

The Lion, the witch , and the Wardrobe

Classic American Literature

Little Women

The Last of the Mohicans

Tom Sawyer

Poems

"The Bean Eaters"

"Harlem"

"I Like to See it Lap Miles"

Myths

Medus

Atlas
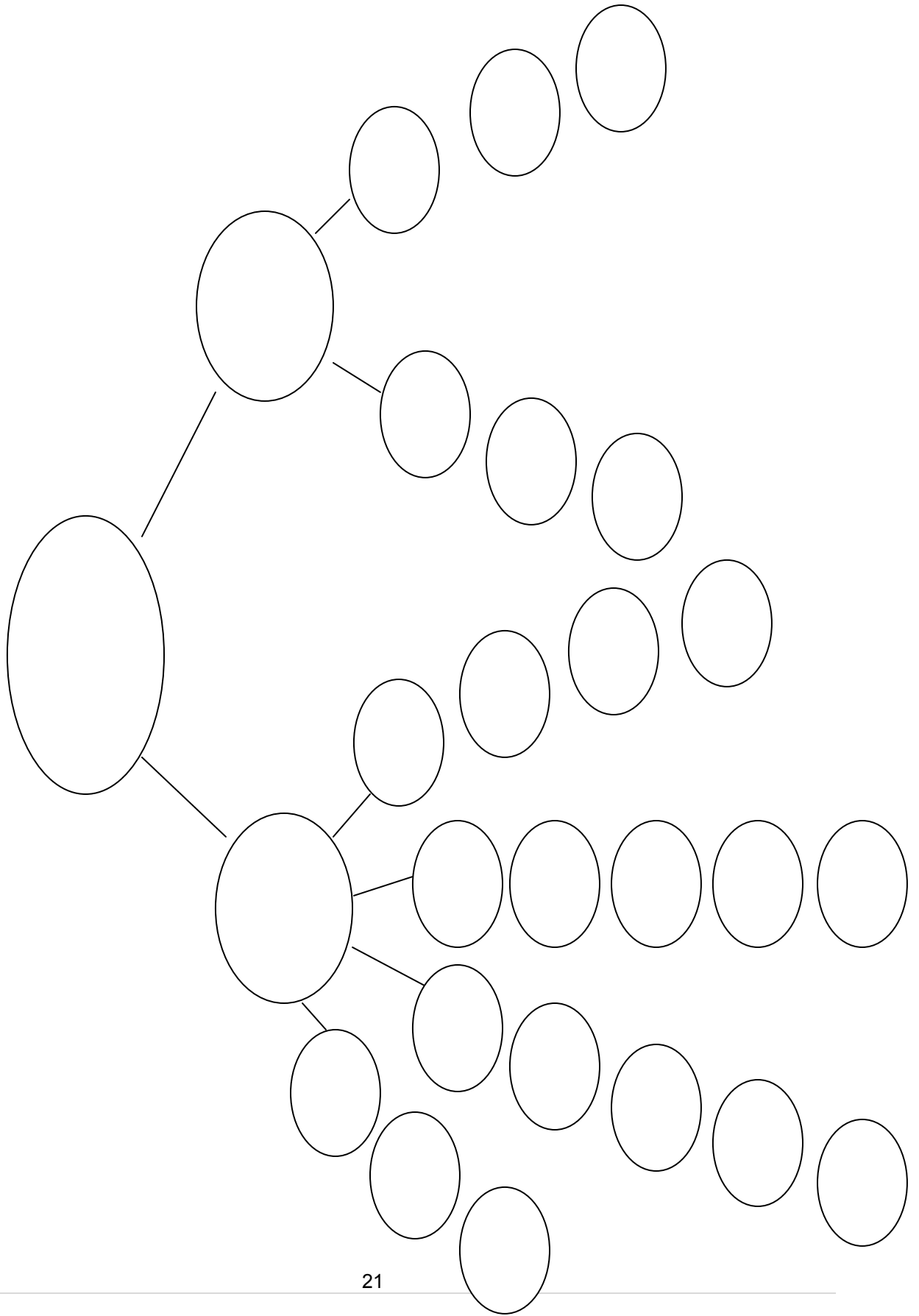
**LOTUS DIAGRAM:**   This graphic organizer is an analytical, organizational tool for breaking broad topics into smaller thematic components.  This specific tool can help students expand upon or clarify a specific topic.

*What do I do?*
- ✓ Determine the topic to be studied and state it clearly.
- ✓ Write that topic in the center rectangle of the Lotus Diagram.
- ✓ Have students develop 8 sub-topics or related components that expand upon the initial topic.  Place the 8 new topics in the ovals surrounding the center box.
- ✓ Students can also draw pictures, instead of writing responses.  For example, the center rectangle can have a picture of George Washington.  Students would then be asked to draw 8 new pictures depicting momentous occasions in his life.
- ✓ Yet another way to use this template is by "sounds".  The center rectangle can have the "sh" listed and students can be asked to write words with the same sound.
- ✓ A "super" lotus diagram can delve into each of the new 8 topics, by expanding each one of those into 8 entirely new topics, now giving you 64 related or expanded ideas from the first initial topic of study ( see the Super Lotus Diagram Organizer).  This is a great way to get students to "open up" their thinking.
- ✓ The example template you have been given is a "super" lotus.  If you choose not to use the expanded version, just have your students use the center portion.

# Lotus Diagram

# Lotus Diagram

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Outline | | | Bibliography | | | Note-Taking Strategy | |
| | | | Outline | Bibliography | Note-Taking Strategy | | | |
| | Mini Lessons | | Mini Lessons | Research Report | Format | | Format | |
| | | | Oral Lessons | Multiple Resourc | 6 Trait Writing | | | |
| Good Paragraph structure | Topic sentences | Step-up format | | | | | | |
| Strong conclusions | Oral Lessons | 5-Paragraph format | | Multiple Resources | | | 6 Trait Writing | |
| Using quotes | Citations | Note-taking strategies | | | | | | |

**ANALOGY ORGANIZER**

Analogies, like metaphors, help us to see how seemingly dissimilar things are similar and therefore, increase our understanding of new information. Often they take the form of A:B::C:D (A is to B as C is to D). This tool will help to identify the "relationship between relationships".

*What do I do?*

This tool is used in several different formats. Each activity will use the same Analogy organizer.

- ✓ The first version of a teacher directed format:
  - o Provides the student with a great deal of structure.
  - o Students are given the two items with a relationship. Students would have A:B and C:D, the rectangles on the organizer are preset.
  - o Students would then be asked to explain how the relationships are similar (how it A:B similar to C:D). Students would explain their answer in the center section of the organizer.
- ✓ The second version of a teacher directed format:
  - o Would be to leave one of the four elements missing in the analogy, either A, B, C, or D.
  - o Students would then fill in the missing component and finish the diagram explaining the relationship that exists.
- ✓ The student directed format invites much more input and critical thinking by the student.
  - o Students would be given one set of elements, either A:B or C:D.
  - o Students would then develop the other pair of elements and describe the relationship between the two sets of elements.

# Analogy Organizer

**A**

| |
|---|

*Is to*

_____

**B**

| |
|---|

*As*

**C**

| |
|---|

*Is to*

_____

**D**

| |
|---|

# Analogy Organizer

**A**

| |
|---|
| Stock Market Crash<br>Of 1929 |

Is to
_____

**B**

| |
|---|
| U.S. economy |

Something attacks a system
And weakness its ability to
Prevent serious affliction

As

**C**

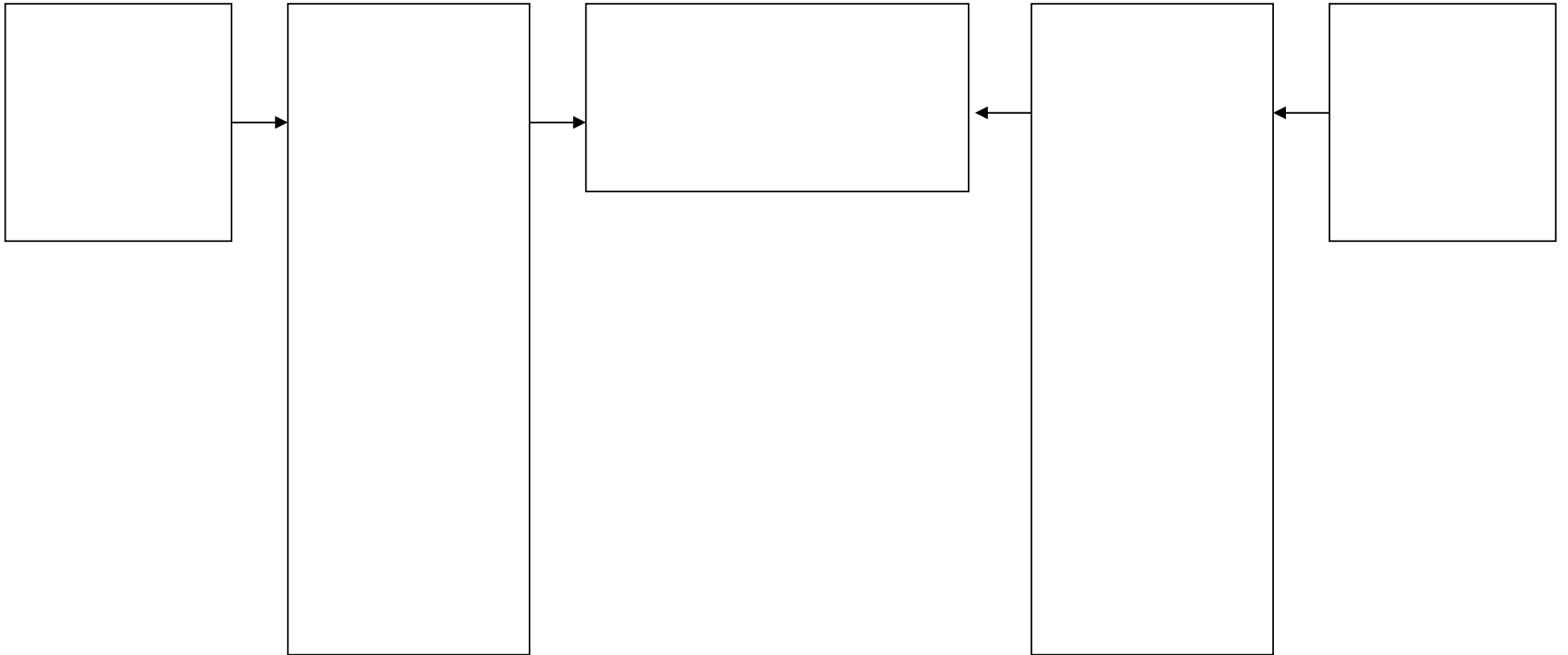| |
|---|
| Exposure to germs |

Is to
_____

**D**

| |
|---|
| Human body |

**METAPHOR ORGANIZER:**   This tool is used to help students make connections between a given element or idea and a second element or idea that has similar qualities and an abstract relationship.  This tool can create strong mental images for students, which can lead to deeper levels of investigation into a specific element or idea.  "Chemistry is a monster" or "The internet is an information superhighway" are examples of how two elements have somewhat different literal patterns, but share a common abstract pattern.  Using this tool will help students to understand and experience one element in terms of another.
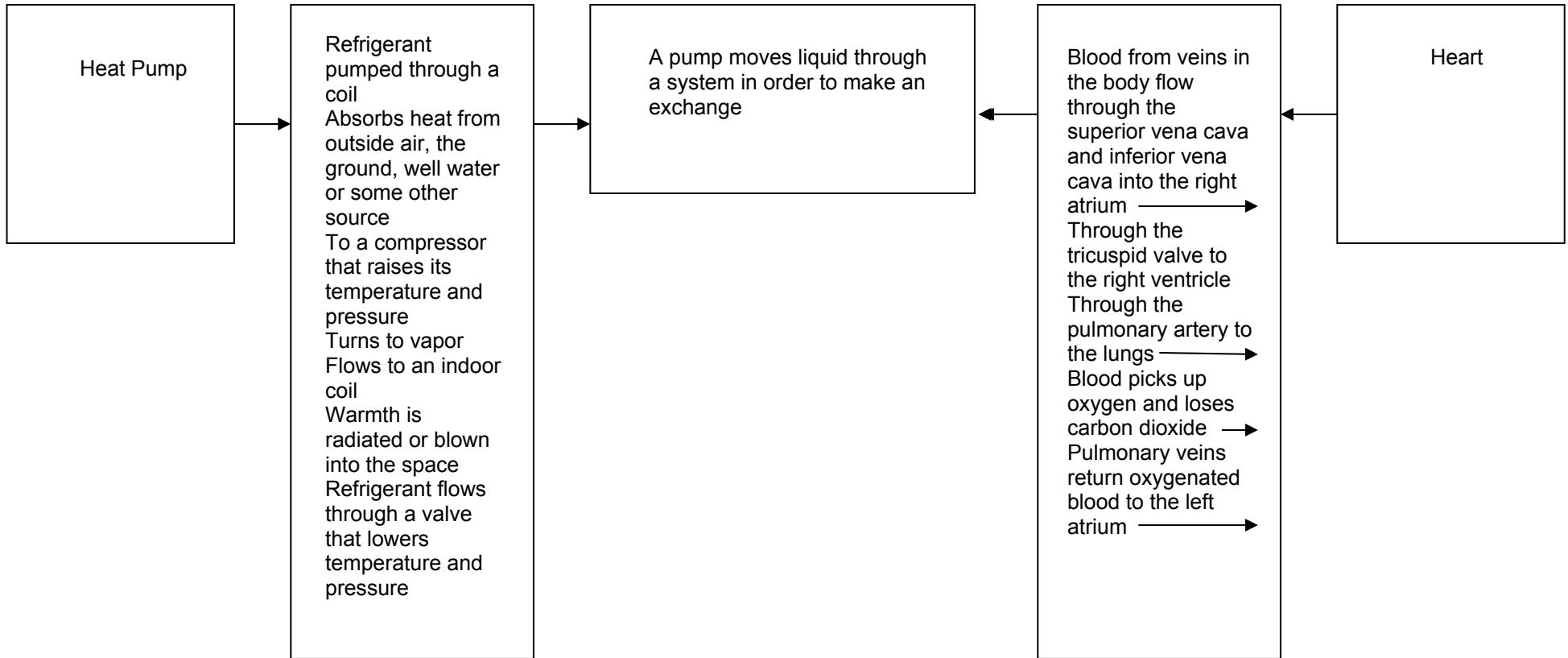
*What do I do?*
- ✓ Initially, students will need help understanding how to scaffold this process.  They may need modeling on how to identify the literal parts of the metaphor and then how to describe the abstract relationship between the two items.
- ✓  First, identify what is important.  What is the basic element you are trying to work with?  Write this element in the box in the left hand column of the organizer.
- ✓ Next, identify the second element of the metaphor that you want to relate to the initial element.  Write this element in the column on the right side of the organizer.
- ✓ Now ask students how they can say the same thing in a more literal way.
  - o These "literal" patterns need to be specific about describing what the element means or represents.  Write each of these new literal patterns in the column directly adjacent to their element.
- ✓ Finally have students deduce the abstract relationship that connects the two initial elements of the metaphor.  This conclusion should be written in the center column of the organizer.

# Metaphor Organizer

| Element | → | Literal Pattern | → | Abstract Relationship | ← | Literal Pattern | ← | Element |

# Metaphor Organizer

| Element | Literal Pattern | Abstract Relationship | Literal Pattern | Element |
|---------|----------------|----------------------|----------------|---------|

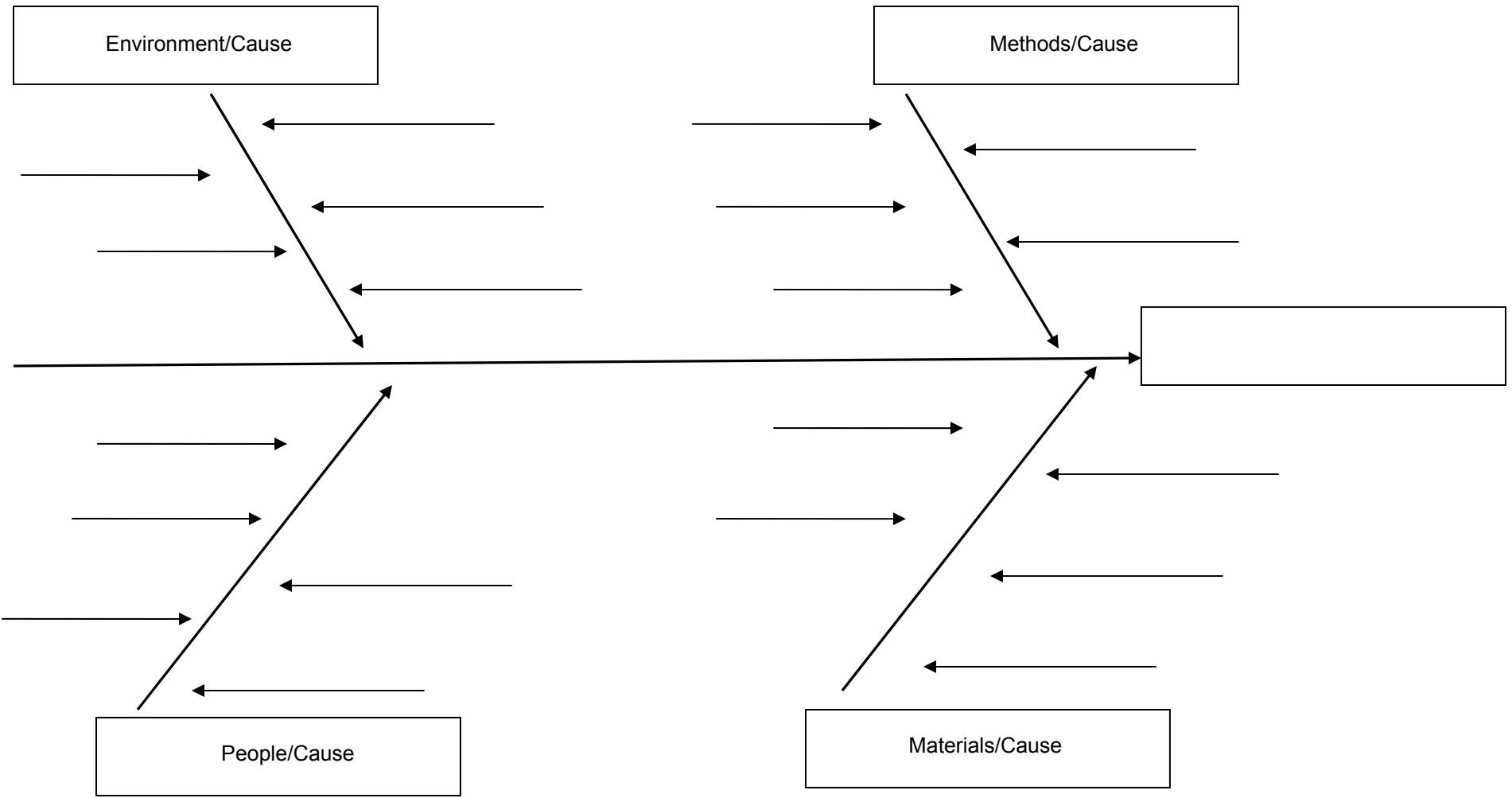| Heat Pump | Refrigerant pumped through a coil<br>Absorbs heat from outside air, the ground, well water or some other source<br>To a compressor that raises its temperature and pressure<br>Turns to vapor<br>Flows to an indoor coil<br>Warmth is radiated or blown into the space<br>Refrigerant flows through a valve that lowers temperature and pressure | A pump moves liquid through a system in order to make an exchange | Blood from veins in the body flow through the superior vena cava and inferior vena cava into the right atrium ⟶<br>Through the tricuspid valve to the right ventricle<br>Through the pulmonary artery to the lungs ⟶<br>Blood picks up oxygen and loses carbon dioxide ⟶<br>Pulmonary veins return oxygenated blood to the left atrium ⟶ | Heart |

**FISHBONE DIAGRAM (Cause and Effect):** This tool is used to identify and analyze the root cause of a problem. It will show the various factors that contribute to that known cause. This organizer will help to visually represent the relationship between and effect and its causes.
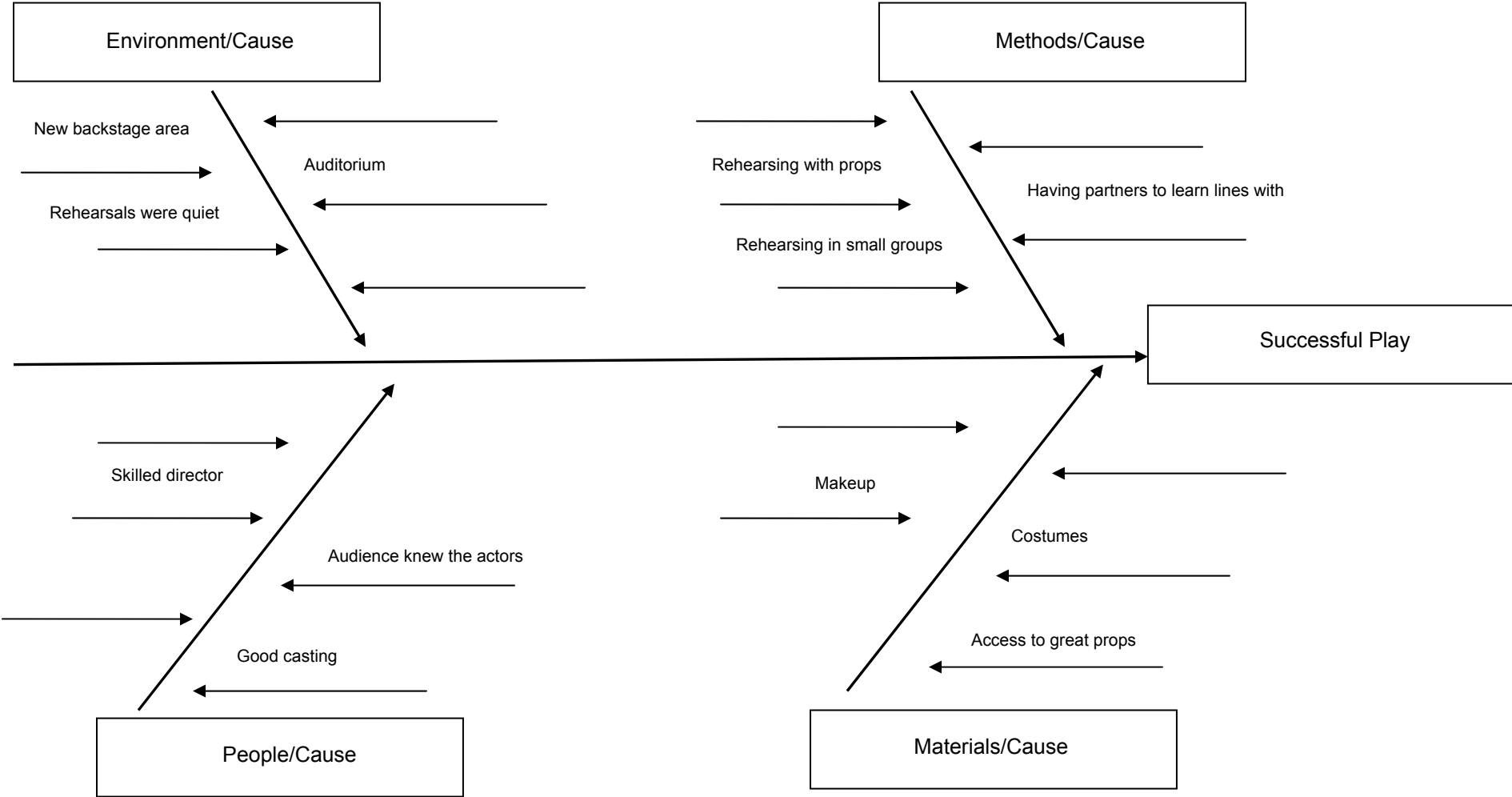
*What do I do?*
- ✓ Decide on the problem or effect to be analyzed.
- ✓ Write that problem or effect in the statement box on the right side of the diagram. Include as much information as possible in this statement such as "what", "when", "where", and "how much".
- ✓ Brainstorm as a group what the "major" bones or "causes" of the problem are. These thoughts become the lines connected to the backbone of the diagram. Label each "bone" with a title.
- ✓ NOTE: In a true fishbone the traditional "bones" or causes reflect upon Environment, People (the human element), Methods(how the work is done), and Materials(things needed to do the work).
- ✓ Have students break into small groups and discuss the contributing factors to each of the identified "bones". Draw smaller lines out from each of the bones to identify each of the contributing factors.
- ✓ Have each group ask "why" repeatedly for each cause added to the "bone".
- ✓ This process will begin to illuminate the true causes of the problem. Check to see if the same cause radiates off of more than one "bone".

# Fishbone Diagram

| Environment/Cause | | Methods/Cause |
|---|---|---|

| People/Cause | | Materials/Cause |
|---|---|---|

# Fishbone Diagram

| Environment/Cause | Methods/Cause |
|---|---|

New backstage area

Auditorium

Rehearsing with props

Having partners to learn lines with

Rehearsals were quiet

Rehearsing in small groups

Successful Play

Skilled director

Makeup

Audience knew the actors

Costumes

Good casting

Access to great props

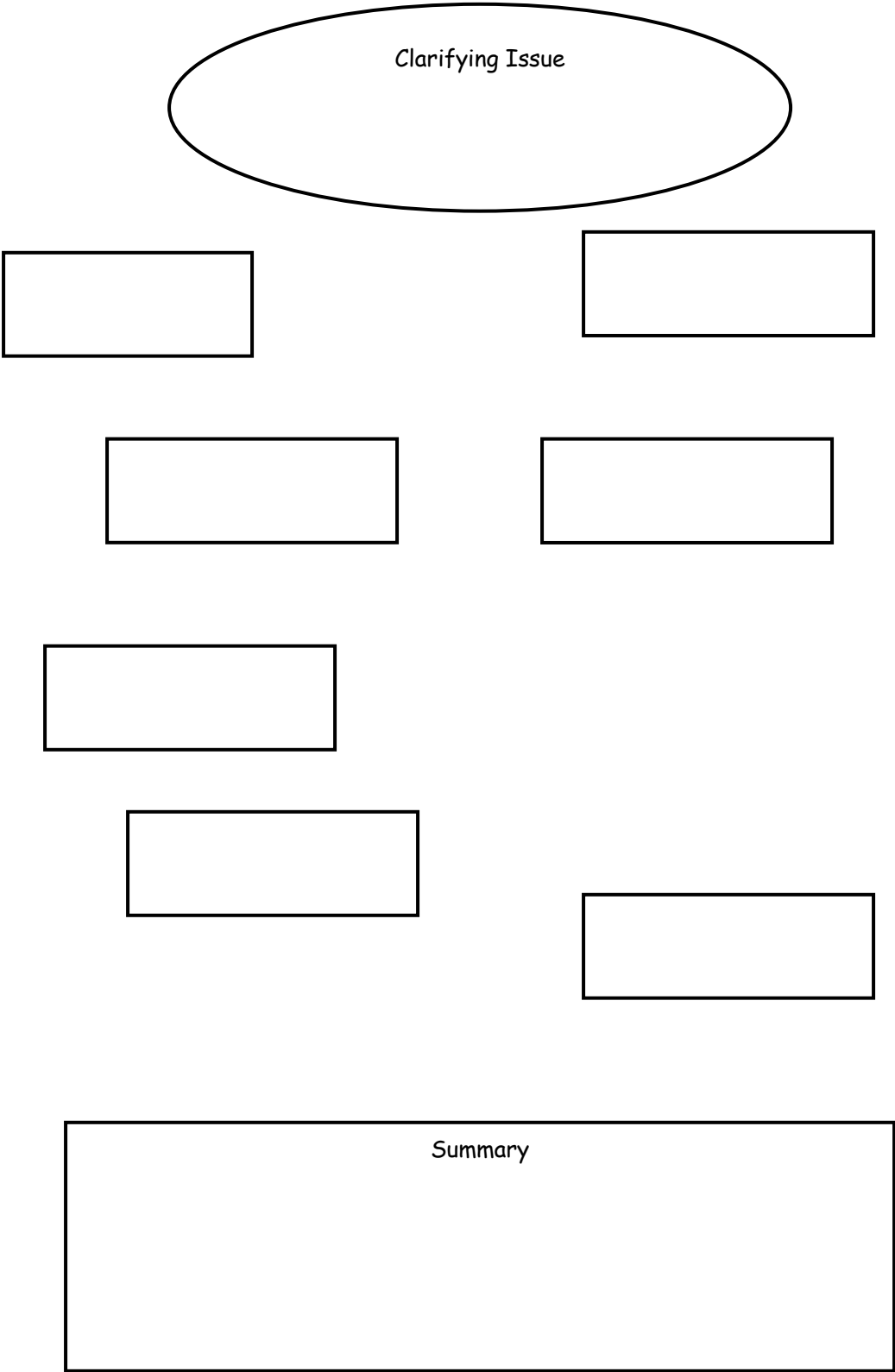| People/Cause | Materials/Cause |
|---|---|

**RELATIONS DIAGRAM:** A relations diagram, like brainstorming can be a group tool. It helps everyone in a group to understand complex issues. This tool helps to sort out cause and effect relationships as well as what causes what. It is also provides clarity on how different aspects of a specific issue are related.
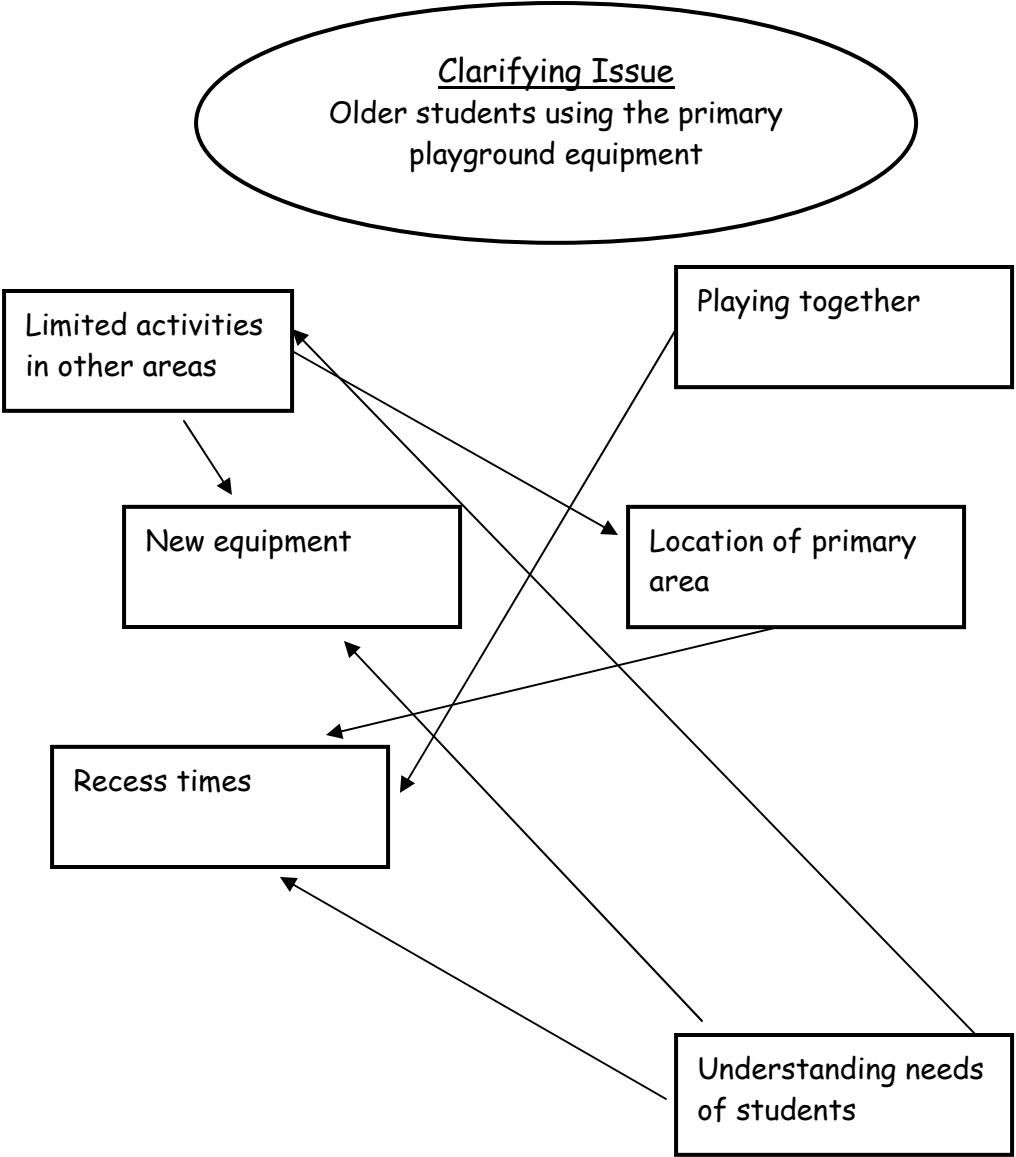*What do I do?*

- ✓ Clarify the issue, problem or topic you want to begin with. Write that item at the top of the diagram.
- ✓ Brainstorm ideas around the issue, problem, or topic and write them in separate boxes below the initial topic.
- ✓ Starting with one of the brainstormed topics ask the question "Does this idea cause or influence any other idea?" Draw arrows <u>from</u> each idea <u>to</u> the ones it causes or influences. Repeat this question for every idea.
- ✓ Analyze the diagram:
  - o Count how many arrows "in" and "out" each idea has. The topics with the most arrows are key ideas.
    - ▪ Note which ideas have primarily outgoing (from) arrows. These are the basic causes.
    - ▪ Note which ideas have primarily incoming (to) arrows. These are final *effects* that also may be critical to address.
- ✓ Have students summarize what they learned.

# Relations Diagram

Clarifying Issue

Summary

# Relations Diagram

Clarifying Issue
Older students using the primary
playground equipment

Limited activities
in other areas

Playing together

New equipment

Location of primary
area
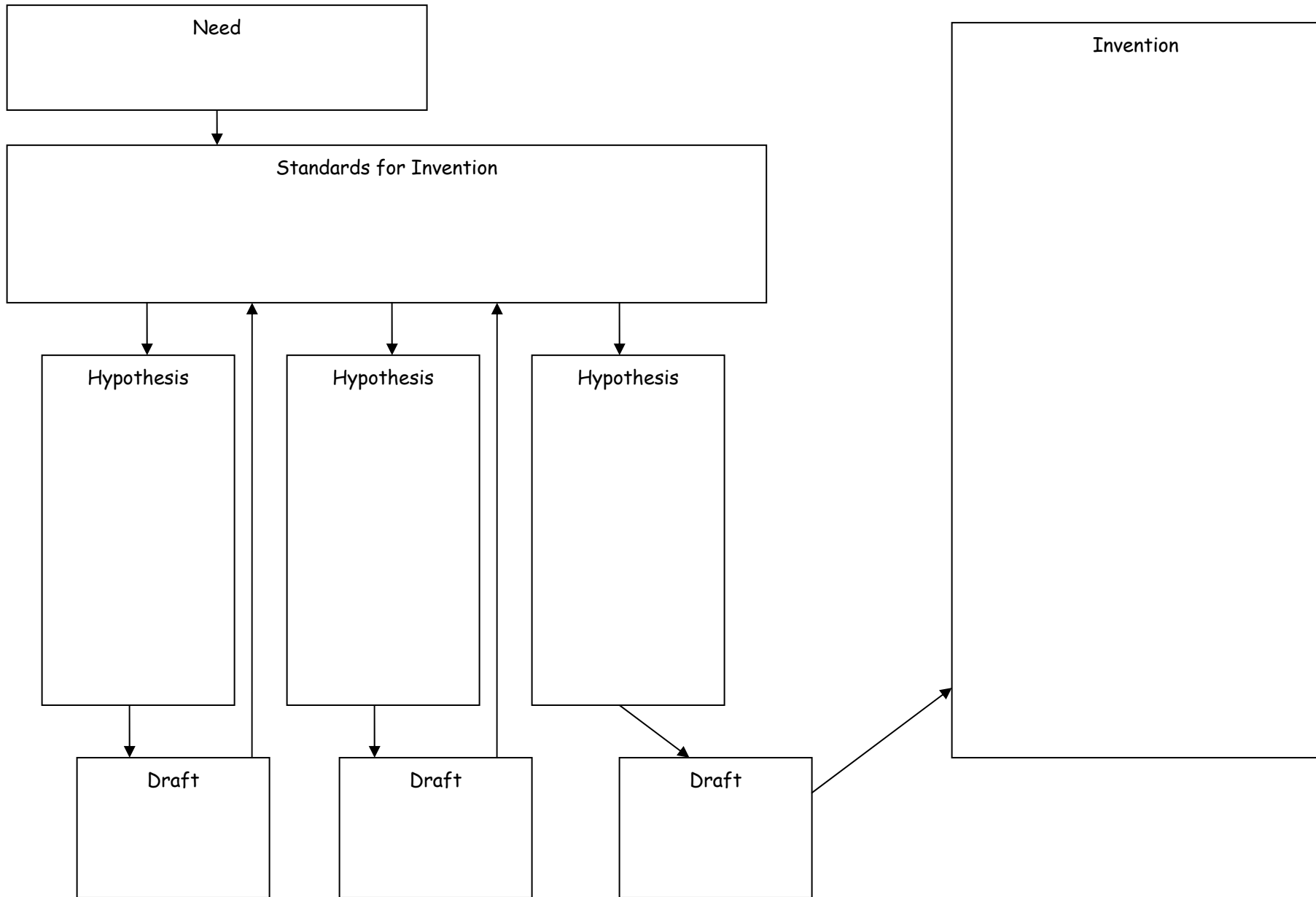
Recess times

Understanding needs
of students

Summary
The topic with the greatest number of arrows out is
"understanding the need of students". The topic with the greatest
number of arrows in is "recess time". We need to better understand what
the students needs really are.

**INVENTION DIAGRAM:** This is an excellent tool to use to help students critically think through a process. If the question could be asked "Shouldn't there be a better way to……..?" then this is the tool to help students answer that question. This diagram will involve hypothesizing, developing an idea and then testing the invention and if the results are unsatisfactory, doing it again until one proves effective.
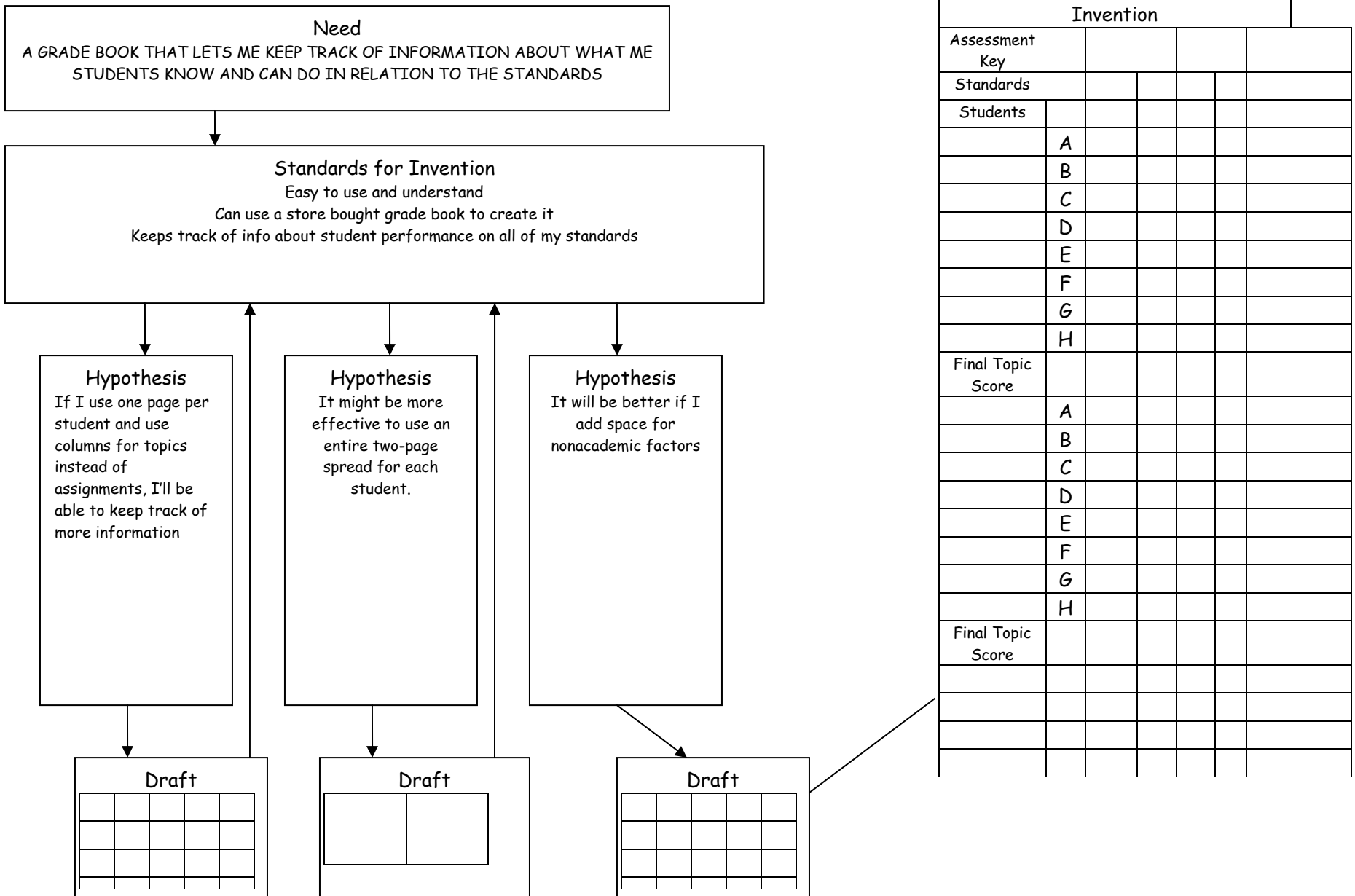
*What do I do?*
- ✓ Describe a situation that needs improvement or a need you must respond to. What do I want to make? Or what do I want to make better? Have students write this situation or topic in the "Need" box in the organizer. In the beginning, you may want to give the students the topic to address until they are comfortable with engaging in the process themselves.
- ✓ Have students identify specific standards for the invention that would improve the situation or topic identified. Students will list these standards in the "Standards for Invention" rectangle in the organizer.
- ✓ Students will then brainstorm ideas and hypothesize the likelihood that each will work. Students will write out their hypothesis in each of the indicated rectangles. Make sure they list only one idea per box.
- ✓ In the next step, students will conduct tests or design and sketch out concepts to determine if their idea does in fact work. If the concept does not work, they must revise until it reaches the standard they set out to meet.
- ✓ It is extremely important for students to be able to explain their conclusions. Although there is not an actual place on the organizer to write the explanation, you may consider having them articulate their conclusion on the reverse side if the "Invention" rectangle is occupied by a design.

# Invention Organizer

**Need**

**Standards for Invention**

**Invention**

**Hypothesis**

**Hypothesis**

**Hypothesis**

**Draft**

**Draft**

**Draft**

# Invention Organizer

| Need |
|---|
| A GRADE BOOK THAT LETS ME KEEP TRACK OF INFORMATION ABOUT WHAT ME STUDENTS KNOW AND CAN DO IN RELATION TO THE STANDARDS |

| Standards for Invention |
|---|
| Easy to use and understand |
| Can use a store bought grade book to create it |
| Keeps track of info about student performance on all of my standards |

| Hypothesis | Hypothesis | Hypothesis |
|---|---|---|
| If I use one page per student and use columns for topics instead of assignments, I'll be able to keep track of more information | It might be more effective to use an entire two-page spread for each student. | It will be better if I add space for nonacademic factors |

| Draft | Draft | Draft |
|---|---|---|

| Invention | | | | |
|---|---|---|---|---|
| Assessment Key | | | | |
| Standards | | | | |
| Students | | | | |
| | A | | | |
| | B | | | |
| | C | | | |
| | D | | | |
| | E | | | |
| | F | | | |
| | G | | | |
| | H | | | |
| Final Topic Score | | | | |
| | A | | | |
| | B | | | |
| | C | | | |
| | D | | | |
| | E | | | |
| | F | | | |
| | G | | | |
| | H | | | |
| Final Topic Score | | | | |

**CORNELL NOTES:** The Cornell Note-taking System provides a powerful learning tool for students. It was developed by Walter Pauk in 1949 at Cornell University because of his frustration over low test scores. This system has been adopted by the AVID program and most law schools as the preferred note-taking method.
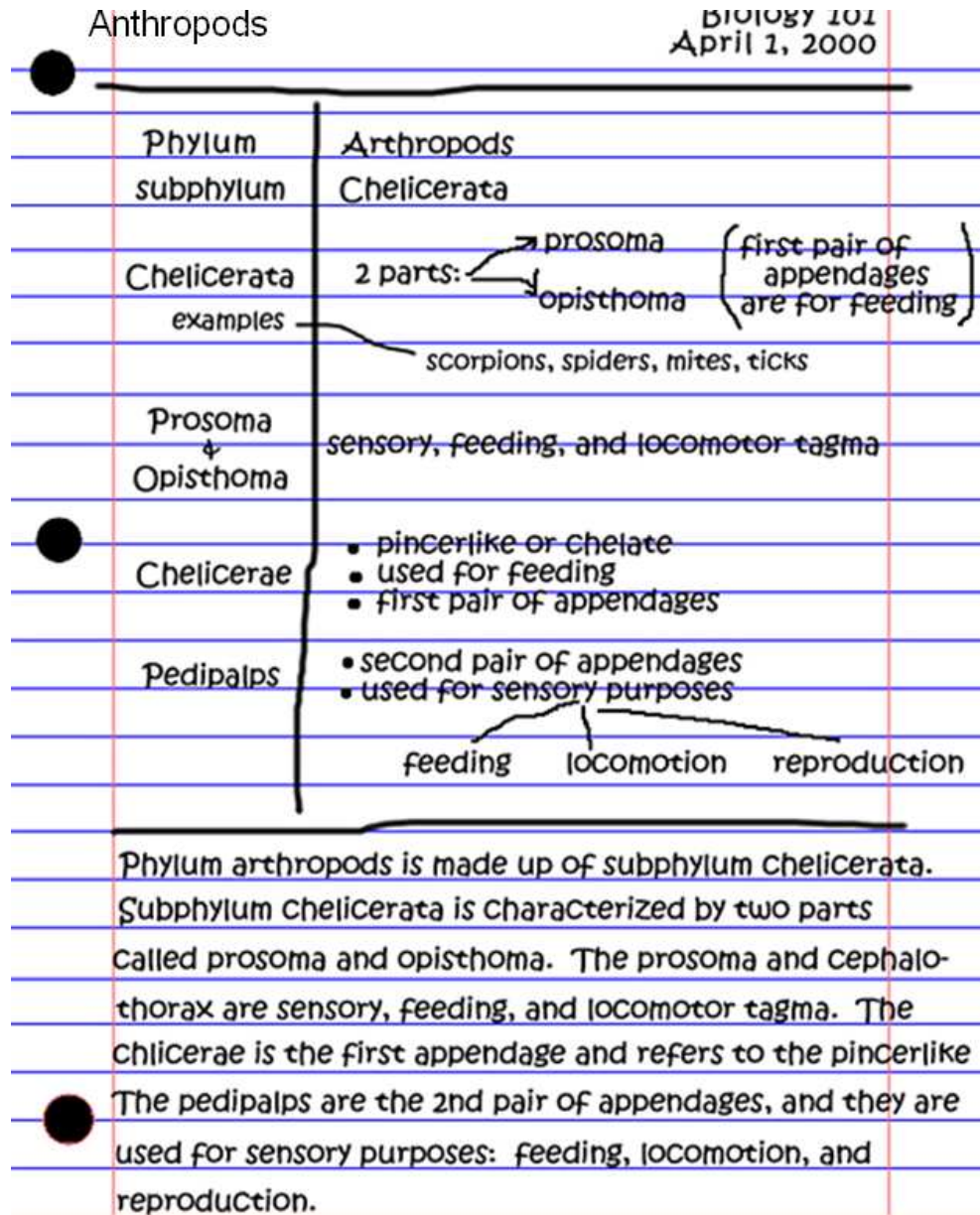
*What do I do?*
- ✓ The key point of focus is that Cornell Note-taking is a system, not just a note format. Model the system to the students.
- ✓ Format note paper as shown.

| Topic | First and Last Name<br>Class Title<br>Period<br>Date |
|---|---|
| Questions, Subtitles, Headings, Comments ETC. | Class Notes<br>or<br>Notes from Text |
| **Summary:**<br>Do on the bottom of each page, just at the end of the notes, or a combination of both. | |

✓ Teach the six steps for this note-taking system. See the handout for a recap of the steps and how to use those steps with the above format.

1. RECORD: During the lecture or while reading the text, students will write down facts and ideas on the right side of the paper. Being flexible in the requirements for this portion will provide the opportunity to differentiate to meet the all learning styles. Students should be encouraged to use what works for them (bullets, symbols, sketches, diagrams, even adjusting to three columns here). After the lecture or reading, students must return to these notes to fill in blanks, make scribbles more legible, or clarify any misconceptions.

2. REDUCE or QUESTION: Students write on the left column key words or phrases, questions that might guide the learning, or comments about the material from the recorded. This should be in the students' own words, not just copied from the text or teacher's notes.

3. RECITE: Students then cover the notes and read the key words and questions from the left column. They recite the fact or idea brought to mind by that key word or question. This is a great activity to do with partners or in triads. Students compare notes and share important details. This step requires students to verbalize their learning in their own words.

4. REFLECT: The note-takers then think about what they have learned. This is a great time to assign a reflective paragraph as an assignment.

5. REVIEW: It is critical to provide opportunities for students to use their notes as a study tool and regularly review what they have learned.

6. RECAPITULATION: At the bottom of each page, students summarize the main idea from that page. Students need to use complete sentences and put the ideas into their own words. This step takes learning to a deeper level.

- ✓ A helpful website for Cornell Note format is:
  http://incompetech.com/graphpaper/
- ✓ A sample of student's notes is shown below.

Anthropods                                        Biology 101
                                                  April 1, 2000

| Phylum | Arthropods |
| subphylum | Chelicerata |

Chelicerata — 2 parts: prosoma, opisthoma (first pair of appendages are for feeding)

examples — scorpions, spiders, mites, ticks

Prosoma & Opisthoma — sensory, feeding, and locomotor tagma

Chelicerae
- pincerlike or chelate
- used for feeding
- first pair of appendages

Pedipalps
- second pair of appendages
- used for sensory purposes

feeding    locomotion    reproduction

Phylum arthropods is made up of subphylum chelicerata. Subphylum chelicerata is characterized by two parts called prosoma and opisthoma. The prosoma and cephalothorax are sensory, feeding, and locomotor tagma. The chlicerae is the first appendage and refers to the pincerlike. The pedipalps are the 2nd pair of appendages, and they are used for sensory purposes: feeding, locomotion, and reproduction.

Topic:

---

## 2. REDUCE or QUESTION:
~ Write key words, phrases or questions that will cues for the material covered
~ Cue questions and phrases should be in your own words

## 3. RECITE:
~ Cover notes and read each key word or question
~ Recite the fact or idea brought to mind by each key word or question

## 1. RECORD
During the lecture or while reading the text:
~ Write down facts and ideas
~ Use abbreviations
~ Use what works for you (bullets, symbols, sketches, diagrams, even adding an extra column in this section)
After the lecture or reading:
~ Fill in the blanks
~ Make scribbles more legible

## 4. and 5. REFELCT and REVIEW
~ Think about what you have learned
Review notes periodically be reciting individually and with a peer

## 6. RECAPITULATION
~ Summarize each main idea covered on this page of notes
~ Use complete sentences