Habits of Mind

Use Knowledge Meaningfully

Extend and Refine Knowledge

Acquire and Integrate Knowledge

Attitudes and Perceptions
Dimensions of Learning

Attitudes and Perceptions

I. About Classroom Climate
   • Feel accepted by teachers and peers
   • Experience a sense of comfort and order

II. About Classroom Tasks
   • Perceive tasks as valuable and interesting
   • Believe they have the ability and resources to complete tasks
   • Understand and be clear about tasks
Dimensions of Learning

Acquire & Integrate Knowledge

Declarative
Construct Meaning
Organize
Store

Procedural
Construct Models
Shape
Internalize
Dimensions of Learning

Extend & Refine Knowledge

Comparing
Classifying
Abstracting
Inductive Reasoning
Deductive Reasoning
Constructing Support
Analyzing Errors
Analyzing Perspectives
Dimensions of Learning

- Use Knowledge Meaningfully
- Decision Making
- Problem Solving
- Invention
- Experimental Inquiry
- Investigation
- Systems Analysis
Dimensions of Learning

Habits of Mind

Critical Thinking
• Be accurate and seek accuracy
• Be clear and seek clarity
• Maintain an open mind
• Restrain impulsivity
• Take a position when the situation warrants it
• Respond appropriately to others’ feelings and level of knowledge

Creative Thinking
• Persevere
• Push the limits of your knowledge and abilities
• Generate, trust, and maintain your own standards of evaluation
• Generate new ways of viewing situations that are outside the boundaries of standard conventions

Self-Regulated Thinking
• Monitor your own thinking
• Plan appropriately
• Identify and use necessary resources
• Respond appropriately to feedback
• Evaluate the effectiveness of your actions
## Dimensions of Learning Outline

### Attitudes & Perceptions
I. Classroom Climate
   A. Acceptance by Teachers and Peers
   B. Comfort and Order
II. Classroom Tasks
   A. Value and Interest
   B. Ability and Resources
   C. Clarity

### Acquire & Integrate Knowledge
I. Declarative
   A. Construct Meaning
   B. Organize
   C. Store
II. Procedural
   A. Construct Models
   B. Shape
   C. Internalize

### Extend & Refine Knowledge
Comparing
Classifying
Abstracting
Inductive Reasoning
Deductive Reasoning
Constructing Support
Analyzing Errors
Analyzing Perspectives

### Use Knowledge Meaningfully
Decision Making
Problem Solving
Invention
Experimental Inquiry
Investigation
Systems Analysis

### Habits of Mind
Critical Thinking
Creative Thinking
Self-Regulated Thinking
### Dimension 1: Attitudes and Perceptions

**What will be done to help students develop positive attitudes and perceptions? (p. 39)**

**Step 1:** Are there any goals or concerns related to students’ attitudes and perceptions in general or related to this specific unit?

**Step 2:** What will be done to address these goals or concerns?

**Step 2a:** Specifically, will anything be done to help students develop positive attitudes and perceptions about classroom climate and classroom tasks?

**Step 2b:** Describe what will be done.

- **Classroom Climate**
  - Help students understand that attitudes and perceptions related to classroom climate influence learning. (p. 15)
  - Establish a relationship with each student in the class. (p. 16)
  - Monitor and attend to your own attitudes. (p. 17)
  - Engage in equitable and positive classroom behavior. (p. 17)
  - Recognize and provide for students’ individual differences. (p. 18)
  - Respond positively to students’ incorrect responses or lack of response. (p. 19)
  - Vary the positive reinforcement offered when students give the correct response. (p. 19)
  - Structure opportunities for students to work with peers. (p. 20)
  - Provide opportunities for students to get to know and accept each other. (p. 21)
  - Help students develop their ability to use their own strategies for gaining acceptance from their teachers and peers. (p. 21)
  - Frequently and systematically use activities that involve physical movement. (p. 23)
  - Introduce the concept of “bracketing.” (p. 24)
  - Establish and communicate classroom rules and procedures. (p. 24)
  - Be aware of malicious teasing or threats inside or outside of the classroom, and take steps to stop such behavior. (p. 26)
  - Have students identify their own standards for comfort and order. (p. 26)

- **Classroom Tasks**
  - Help students understand that learning is influenced by attitudes and perceptions related to classroom tasks. (p. 29)
  - Establish a sense of academic trust. (p. 30)
  - Help students understand how specific knowledge is valuable. (p. 30)
  - Use a variety of ways to engage students in classroom tasks. (p. 31)
  - Create classroom tasks that relate to students’ interests and goals. (p. 32)
  - Provide appropriate feedback. (p. 33)
  - Teach students to use positive self-talk. (p. 33)
  - Help students recognize that they have the abilities to complete a particular task. (p. 34)
  - Help students understand that believing in their ability to complete a task includes believing that they have the ability to get the help and the resources needed. (p. 34)
  - Help students be clear about the directions and demands of the task. (p. 35)
  - Provide students with clarity about the knowledge that the task addresses. (p. 35)
  - Provide students with clear expectations of performance levels for tasks. (p. 36)

### Dimension 2: Acquire and Integrate Knowledge

**What will be done to help students acquire and integrate declarative knowledge? (p. 83)**

**Step 1:** What declarative knowledge will students be in the process of acquiring and integrating? As a result of this unit, students will know or understand...

**Step 2:** What experiences or activities will be used to help students acquire and integrate this knowledge?

**Step 3:** What strategies will be used to help students construct meaning for, organize, and/or store this knowledge?

**Step 4:** Describe what will be done.

- **Construct Meaning**
  - Help students understand what it means to construct meaning. (p. 52)
  - Use the three-minute pause. (p. 53)
  - Help students experience content using a variety of senses. (p. 53)
  - Help students to construct meaning for vocabulary terms. (p. 54)
  - Present students with the K-W-L strategy. (p. 55)
  - Create opportunities for students to discover or figure out the new information for themselves. (p. 56)
  - Use instructional techniques that provide students with strategies to use before, during, and after they receive information. (p. 58)

- **Organize**
  - Help students understand the importance of organizing information. (p. 61)
  - Have students use graphic organizers for the identified organizational patterns. (p. 62)
  - Provide students with advance organizer questions. (p. 68)
  - Present note-taking strategies that use graphic representations. (p. 70)
  - Have students create physical and pictographic representations of information. (p. 71)
  - Have students use graphs and charts. (p. 72)

- **Store**
  - Help students understand the process of storing information. (p. 74)
  - Present students with the strategy of using symbols and substitutes. (p. 74)
  - Use the link strategy with students. (p. 75)
  - Use highly structured systems for storing information with students. (p. 76)
  - Provide students with mnemonics for important content. (p. 80)

### Dimension 3: Procedural

**What will be done to help students acquire and integrate procedural knowledge? (p. 106)**

**Step 1:** What procedural knowledge will students be in the process of acquiring and integrating? As a result of this unit, students will be able to...

**Step 2:** What strategies will be used to help students construct models for, shape, and/or internalize this knowledge?

**Step 3:** Describe what will be done.

- **Construct Models**
  - Help students understand the importance of constructing models for procedural knowledge. (p. 94)
  - Use a think-aloud process to demonstrate a new skill or process. (p. 94)
  - Provide or construct with students a written or graphic representation of the skill or process they are learning. (p. 95)
  - Help students see how the skill or process they are learning is similar to and different from other skills or processes. (p. 96)
  - Teach students to mentally rehearse the steps involved in a skill or process. (p. 96)

- **Shape**
  - Help students understand the importance of shaping procedural knowledge. (p. 97)
  - Demonstrate and create opportunities for students to practice using the important variations of the skill or process. (p. 98)
  - Point out common errors and pitfalls. (p. 98)
  - Help students develop the conceptual understanding necessary to use the skill or process. (p. 99)

- **Internalize**
  - Help students understand the importance of internalizing procedural knowledge. (p. 101)
  - Help students set up a practice schedule. (p. 102)
  - Have students chart and report on their speed and/or accuracy when practicing new skills or processes. (p. 103)
### Dimension 3
Extend and Refine Knowledge

**What will be done to help students extend and refine knowledge?** (p. 185)

**Step 1:** What knowledge will students be extending and refining? Specifically, students will be extending and refining their understanding of . . .

**Step 2:** What reasoning process will students be using?

**Step 3:** Describe what will be done.

### Dimension 4
Use Knowledge Meaningfully

**What will be done to help students use knowledge meaningfully?** (p. 255)

**Step 1:** What knowledge will students be using meaningfully? Specifically, students will be demonstrating their understanding of or ability to . . .

**Step 2:** What reasoning process will students be using?

**Step 3:** Describe what will be done.

### Dimension 5
Habits of Mind

**What will be done to help students develop productive habits of mind?** (p. 298)

**Step 1:** Are there any goals or concerns related to students’ habits of mind in general or related to this specific unit?

**Step 2:** What will be done to address these goals or concerns?

**Step 2a:** Specifically, will anything be done to help students develop critical thinking, creative thinking, and self-regulated thinking?

**Step 2b:** Describe what will be done.

### Comparing (p. 117)
- Would it be useful to show how things are similar and/or different?
- Would it be useful for students to focus on identifying how similar things are different and how different things are similar?
- Would it be helpful to have students describe how comparing things affects their knowledge or opinions related to those things?

### Classifying (p. 123)
- Would it be helpful to have students group things?
- Would it be beneficial for students to generate a number of ways to group the same list of things?

### Abstraction (p. 130)
- Is there an abstract pattern that could be applied?
- Could something complex or unfamiliar be understood better by generating an abstract pattern and applying it to something simple or more familiar?
- Are there seemingly different things that could be connected through the generation of an abstract pattern?

### Inductive Reasoning (p. 138)
- Are there important unstated conclusions that could be generated from observations or facts?
- Are there situations for which probable or likely conclusions could be generated?
- Are there issues or situations for which students could examine the inductive reasoning used?

### Deductive Reasoning (p. 146)
- Are there generalizations (or rules or principles) that could be applied to reach conclusions and make predictions?
- Are there topics or issues for which students could examine the validity of the deductive reasoning used?

### Constructing Support (p. 160)
- Are there important claims to be refuted or supported?
- Would it be important to examine existing arguments that support or refute a claim?

### Analyzing Errors (p. 168)
- Are there situations in which it would be beneficial to identify errors in reasoning?

### Analyzing Perspectives (p. 178)
- Would it be useful to identify and understand the reasoning or logic behind a perspective on a topic or issue?

### Decision Making (p. 195)
- Is there an unresolved decision important to the unit?
- Is there an unresolved issue about who or what is the best or worst?
- Is there an unresolved issue about who or what has the most or least?

### Problem Solving (p. 205)
- Is there a situation or process that has some major constraint or limiting condition?
- Is there a situation or process that could be better understood if constraints or limiting conditions were placed on it?

### Invention (p. 214)
- Is there a situation that can and should be improved on?
- Is there something new that should be created?

### Experimental Inquiry (p. 224)
- Is there an unexplained phenomenon (physical or psychological) for which students could generate explanations that can be tested?

### Investigation (p. 234)
- Is there an unresolved issue about the defining characteristics or defining features of something? (Definition)
- Is there an unresolved issue about how something occurred? (Historical)
- Is there an unresolved issue about why something happened? (Historical)
- Is there an unresolved issue about what would happen if . . . or what would have happened if . . . (Projective)

### Systems Analysis (p. 246)
- Are there parts of a system or the interactions of the parts of a system that could be analyzed?
- Is there something that could be examined in terms of how it behaves or works within a system?

### Decision Making (p. 195)
- Specifics of how things are similar and/or different?
- Specifics of how similar things are different and how different things are similar?
- Specifics of how comparing things affects their knowledge or opinions related to those things?

### Classifying (p. 123)
- Specifics of how it would be helpful to have students group things?
- Specifics of how it would be beneficial for students to generate a number of ways to group the same list of things?

### Abstraction (p. 130)
- Specifics of how it is an abstract pattern that could be applied?
- Specifics of how it could something complex or unfamiliar be understood better by generating an abstract pattern and applying it to something simple or more familiar?
- Specifics of how it are there seemingly different things that could be connected through the generation of an abstract pattern?

### Inductive Reasoning (p. 138)
- Specifics of how it are there important unstated conclusions that could be generated from observations or facts?
- Specifics of how it are there situations for which probable or likely conclusions could be generated?
- Specifics of how it are there issues or situations for which students could examine the inductive reasoning used?

### Deductive Reasoning (p. 146)
- Specifics of how it are there generalizations (or rules or principles) that could be applied to reach conclusions and make predictions?
- Specifics of how it are there topics or issues for which students could examine the validity of the deductive reasoning used?

### Constructing Support (p. 160)
- Specifics of how it are there important claims to be refuted or supported?
- Specifics of how it would it be important to examine existing arguments that support or refute a claim?

### Analyzing Errors (p. 168)
- Specifics of how it are there situations in which it would be beneficial to identify errors in reasoning?

### Analyzing Perspectives (p. 178)
- Specifics of how it would it be useful to identify and understand the reasoning or logic behind a perspective on a topic or issue?