Worksheet 2: Questions to formulate important learning objectives

Questions for Formulating Significant Learning Goals

“A year (or more) after this course is over, I want and hope that students will _____:”

I want to give students the essential knowledge and skills to cultivate a growth mindset, foster critical thinking, effective communication, and a passion for learning, cultivate emotional skills, and instill resilience to overcome challenges. Ultimately, I want to help students develop independent learners who are academically proficient and prepared to lead fulfilling lives.

My Big Hairy Audacious Goal (BHAG) for the course is:

By employing a blended approach and emphasizing a constructive learning atmosphere, I aim to enhance students' academic engagement, sense of ownership, and critical thinking abilities by exploring essential academic vocabulary related to the unit of study. The daily pursuit of vocabulary will facilitate connections for my students, allowing them to activate their prior knowledge alongside newly acquired information, thereby supporting their development as lifelong learners.

Foundational Knowledge

What key information (e.g., facts, terms, formulae, concepts, principles., relationships, etc) is/are essential for students to understand and remember in the future?

Students build and maintain a robust vocabulary that helps them understand and convey concepts clearly, preparing them for scenarios they may encounter in the real world.
Students must learn to utilize digital resources, such as iPads and headphones, which are essential technology functionalities.

What key ideas (or perspectives) are essential for students to understand this course?
Students recognize the importance of asking questions and exploring the world to foster a lifelong love of learning.

Students have hands-on experiences and play as essential methods for understanding scientific concepts, encouraging active participation.

Students should acquire basic vocabulary to understand scientific concepts.

Application Goals

What kinds of thinking are important for students to learn?

Critical Thinking: Students analyze and evaluate.

Creative Thinking: Students use their imaginations to approach experiments.

Scientific Thinking: Students are driven by curiosity to explore the world, make observations, form hypotheses, and conduct experiments.

Practical Thinking: Students solve problems and make decisions.

What important skills do students need to gain?

- Observation Skills
- Inquiry Skills
- Critical Thinking
- Problem-Solving
- Communication Skills
- Collaboration
- Social-emotional Skills
- Data collecting

Do students need to learn how to manage complex projects?

Managing complex projects is crucial because it fosters essential skills such as critical thinking, problem-solving, and collaboration. Students must address challenges in the classroom and their everyday lives.

Integration Goals

What connections (similarities and interactions) should students recognize and make?

- **Among ideas within this course?**

Connecting the scientific method with hands-on investigations, understanding that questioning and exploration lead to more profound knowledge.

- **Among the information, ideas, and perspectives in this course and those in other courses or areas?**

Students understand how science concepts relate to other subjects, such as math for measuring and data analysis and literacy for reading and writing about science.

- **Among material in this course and the students' own personal, social, and/or work life?**

Students need to acknowledge the significance of scientific concepts in their daily lives. For example, they need to understand weather patterns to plan outdoor activities, be knowledgeable about ecosystems, foster responsibility toward environmental conservation, and understand environmental challenges and how they affect us.

Human Dimension Goals

What could or should students learn about themselves?

Students should learn how they feel about challenges and successes and how they can help them develop resilience and a positive mindset toward learning.

What could or should students learn about understanding others and/or interacting with them?

Students should understand that everyone has unique strengths, learning styles, and backgrounds. An inclusive classroom environment where all voices are valued should be fostered.

Caring Goals

What changes/values do you hope students will adopt?

Cultivating a growth mindset that encourages resilience when confronted with difficulties, perceiving challenges as opportunities for growth.

"Learning How to Learn" Goals

What would you like for your students to learn about?

<u>How to be good students</u> in a course like this?

Engage actively participating in group activities, discussions, and hands-on experiments.
Being responsible for organizing notes, assignments, and science journals.

How to learn about this particular subject?

Our kindergarten students acquire knowledge most effectively through engaging and interactive methods. Activities that involve hands-on experiences, such as experiments and creative projects, enable them to participate actively. Additionally, play-based learning promotes curiosity and enhances social skills as children learn through play and cooperative interactions.

How to become a self-directed learner of this subject, i.e., having a learning agenda of what they need/want to learn, and a plan for learning it?

- Developing a learning agenda
- Establish clear objectives
- Having a plan that includes different resources
- Reflect on my learning.
- Proactively seeking opportunities for a growth mindset.

Learning Environment & Situational Factors Adopted from: by L. Dee Fink (2003) Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses. San Francisco: Jossey-Bass