

## What are KUDs?

We at the Institutes on Academic Diversity are convinced that the foundation for powerful differentiated curriculum and instruction is high-quality curriculum. One of the keystones in the development of high-quality curriculum is that teachers clearly articulate what they want students to **Know, Understand, and be able to Do as a result of a unit or lesson. These KUDs are the learning goals that guide curriculum development, frame lessons or units, and anchor the assessments and learning activities.**

## Writing Clear KUD Learning Goals

The crafting of KUDs is a skill set that takes time and practice to develop. When developing KUD learning goals, we recommend collaboration with like-minded colleagues. This will provide the think-tank spirit that can help you refine your KUDs so that they provide the platform necessary for powerful differentiated curriculum and instruction.

In the spirit of collaboration, we've provided a selection of well-written KUDs written by teachers and other educational professionals so that you can get that big, "Aha, so this is how KUDs might look," insight.

Primary	
Grade Level, Discipline, & Author	Sample KUD Goals
Preschool Unit on Plants by Alice Wiggins	<p><b>Unit Big Idea (Plants)</b> Plants have different parts that work together to help them live.</p> <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>• Vocabulary related to plants</li> </ul> <p><b>Students will understand that:</b></p> <ul style="list-style-type: none"> <li>• Plants are living things.</li> <li>• There are many different kinds of plants.</li> <li>• Plants have different parts.</li> <li>• Plants need certain conditions to grow.</li> <li>• Plants go through stages as they grow.</li> </ul> <p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>• II-SC1.11 Plant, care for &amp; record observations of a plant, noting the parts of the plant, needs, development &amp; life cycle.</li> <li>• II-SC4.1 Demonstrate use of the scientific reasoning cycle.</li> <li>• I-SR1.1a Attend and listen to illustrated picture books with simple story lines.</li> <li>• I-SR1.3 Find the illustration, or object within the illustration of a book, that is being described.</li> <li>• I-OL9.23 Ask or answer questions beginning with who, what, where, when, why.</li> </ul>

## Elementary

<b><i>Grade Level, Discipline, &amp; Author</i></b>	<b><i>Sample KUD Goals</i></b>
<p>Fifth Grade Science Unit, “Investigating Cells” by Shelby Bowen</p>	<p><b>Unit Big Ideas:</b>            Perspectives/Change            Changes in perspective can give us new information about the world around us.</p> <p><b>The student will understand that:</b></p> <ul style="list-style-type: none"> <li>• Scientists use different perspectives to study living things, both large and small</li> <li>• Scientists use tools to help them to change perspectives.</li> </ul> <p><b>The student will know:</b></p> <ul style="list-style-type: none"> <li>• Microscopic cells are the building blocks of all living things</li> <li>• The similarities and differences of plant and animal cells</li> </ul> <p><b>The student will be able to:</b></p> <ul style="list-style-type: none"> <li>• Make observations using the senses</li> <li>• Gather and analyze data</li> <li>• Make inferences</li> <li>• Make predictions</li> <li>• Develop questions</li> <li>• Develop hypotheses</li> <li>• Investigate objects with a microscope</li> <li>• Compare and contrast characteristics</li> <li>• Classify according to characteristics</li> <li>• Make scientific models</li> <li>• Use the language of the discipline to communicate for a variety of purposes in a variety of formats and for a variety of audiences.</li> </ul>
<p>Second Grade Social Studies Lesson on Native Americans by Kaylen Baker, Sarah Henry, &amp; Leslie Neely</p>	<p><b><u>Objectives</u></b></p> <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>• The definitions of environment, regions, and natural resources</li> <li>• The geographical regions that each of the three Native American tribes lived in</li> <li>• Examples of natural resources in each region and how they were used</li> </ul> <p><b>Students will understand:</b></p> <ul style="list-style-type: none"> <li>• Environmental factors affect the lives of all people because of the varying natural resources that all environments possess.</li> </ul> <p><b>Students will be able to do:</b></p> <ul style="list-style-type: none"> <li>• Compare and contrast how the environment has affected each of the three Native American groups</li> <li>• Explain how the environment affects our lives today</li> <li>• Identify what aspects of the Native Americans’ lives were affected by the environment</li> </ul>

<p>Fourth Grade English/Language Arts Lesson on Poetry by Kaliegh Klemm</p>	<p><b><u>Objectives</u></b></p> <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>• The rules and forms that follow the types of poetry studied throughout the unit.</li> <li>• The terms for various poetic elements and how they are used in poetry.</li> </ul> <p><b>Students will understand:</b></p> <ul style="list-style-type: none"> <li>• That poets use a variety of poetic forms and elements to adequately express their ideas, thoughts, and observations.</li> </ul> <p><b>Students will be able to do:</b></p> <ul style="list-style-type: none"> <li>• Correctly utilize a variety of poetic forms as a form of expression.</li> </ul>
<p>Fifth Grade Math Lesson on Area, "Landscape Architecture," by Jennifer Kumpost</p>	<p><b>I want students to understand that:</b></p> <ul style="list-style-type: none"> <li>• Mathematicians and landscape architects use scale models to represent real world scenarios.</li> <li>• Changing the dimensions of a shape affects the surface area of that shape.</li> </ul> <p><b>I want students to know:</b></p> <ul style="list-style-type: none"> <li>• The corresponding formulas to calculate the area of rectangles and squares.</li> </ul> <p><b>I want students to be able to:</b></p> <ul style="list-style-type: none"> <li>• Represent area to scale on grid paper.</li> <li>• Use area formulas to calculate the area of rectangles and squares.</li> <li>• Recalculate the area of a rectangle and/or square after one or both of the dimensions have been changed.</li> </ul>

## Secondary

<b>Grade Level, Discipline, &amp; Author</b>	<b>Sample KUD Goals</b>
<p>10<sup>th</sup>-12<sup>th</sup> Grade Chemistry Lesson by Jenn Maeng</p>	<p>Objectives</p> <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>• Dimensional analysis is a way of translating a measurement from one unit to another unit.</li> <li>• Atoms and molecules are too small to count by usual means.</li> <li>• Stoichiometry involves quantitative relationships.</li> <li>• Stoichiometric relationships are based on mole quantities in a balanced equation. These are represented by coefficients.</li> <li>• A coefficient is a quantity that precedes a reactant or product symbol or formula in a chemical equation and indicates the relative number of particles involved in the reaction.</li> </ul> <p><b>Students will understand that:</b></p> <ul style="list-style-type: none"> <li>• Conservation of matter is represented in balanced chemical equations.</li> <li>• Changes are quantified in chemical reactions.</li> </ul> <p><b>Students will be able to do:</b></p> <ul style="list-style-type: none"> <li>• Calculate mole ratios.</li> <li>• Make calculations involving relationships between: mole-mole; mass-mass; mole-mass.</li> <li>• Define limiting reactant, excess reactant, and theoretical yield.</li> </ul>
<p>Ninth Grade World History Unit on Early River Civilizations, “Down by the River,” by Sara Slogesky</p>	<p><b><u>UNIT GENERAL KUDS</u></b></p> <p><b>Students will understand that:</b></p> <ul style="list-style-type: none"> <li>▪ <b>Civilizations</b> have certain defining characteristics that allow us to understand their culture and identity.</li> <li>▪ Humans interact with, impact, and manipulate their environment to meet their needs.</li> <li>▪ <b>Civilizations</b> are often <b>located</b> near resources for food, shelter, and transportation.</li> <li>▪ People take on a variety of roles in <b>a civilization</b> to meet their own needs and the needs of others.</li> </ul> <p><b>Students will know:</b></p> <ul style="list-style-type: none"> <li>• How to define and use in context important vocabulary (including Civilization, Specialization, Technology, Social Classes, Ziggurat, Polytheistic/Monotheistic, Hammurabi, Pharaoh, Fertile Crescent).</li> <li>• Map specific Geographic Features &amp; Rivers( including Mesopotamia: Tigris and Euphrates Rivers, Egypt: Nile River, Indus Valley: Indus River, Ancient China: Huang He River, Fertile Crescent, Zagros Mountains, 7 Continents).</li> <li>• Definitions and examples of Characteristics of Civilizations (including Government, Social Classes –Including the different social classes for different civilizations, Religion/Belief System, Economy-Job Specialization, Record Keeping, Advanced Technology, Advanced Cities-Including the specific important architectural structures).</li> </ul>

	<p><b>Students will be able to:</b></p> <ul style="list-style-type: none"> <li>▪ Identify specific characteristics of civilizations</li> <li>▪ Define and connect key terms necessary to understand unit specific historical content</li> <li>▪ Analyze historical information by organizing it into categories</li> <li>▪ Evaluate the success of a civilization, time period, or group of people based on specific criteria</li> <li>▪ Compare and contrast historical topics based on specific characteristics</li> <li>▪ Make connections across multiple historical time periods</li> <li>▪ Generate examples</li> <li>▪ Present historic research in a variety of formats for a specific audience</li> </ul>
<p>Seventh Grade Language Arts Unit, "Taming of the Shrew," by Kristina Doubet</p>	<p><b>As a result of this unit, students will...</b></p> <p><b>...Know:</b></p> <ul style="list-style-type: none"> <li>• drama is a visual medium</li> <li>• relevant Elizabethan historical information (role of woman, marriage traditions, government and social structures, etc.)</li> <li>• key elements of Shakespearean/Elizabethan drama/drama terms integral to understanding the play (pg 6: play within a play, aside, soliloquy, comedy, comic relief, history play, tragedy, tragic flaw, catastrophe, motivation, conflict, crisis or climax, foil, foreshadowing, irony)</li> <li>• Shakespearean devices (meter, iamb, iambic pentameter, etc.)</li> </ul> <p><b>...Understand that:</b></p> <ul style="list-style-type: none"> <li>• One's perspective determines his/her view of what is true and right.</li> <li>• One's perspective is influenced by one's background, assumptions, surroundings, concerns, interests, etc.</li> <li>• One's power determines one's ability/freedom to choose</li> <li>• One's choices can determine one's power</li> <li>• One's gender influences one's power</li> </ul> <p><b>...Be able to:</b></p> <ul style="list-style-type: none"> <li>• Use verbal and non-verbal communication skills</li> <li>• Read drama interpretively</li> <li>• Maintain consistent point of view and verb tense</li> <li>• Write to tell a story</li> <li>• Accurately summarize the plot</li> <li>• Write to express an opinion</li> <li>• Research and share key elements of Shakespearean drama</li> </ul>
<p>Algebra II Lesson on Quadratic Functions by Kristina Fulton</p>	<p><b>Unit Big Ideas:</b> Students will understand that quadratic functions are useful in real life and where quadratic functions apply (in sports, architecture..etc.)</p> <p><b>The student will understand:</b></p> <ul style="list-style-type: none"> <li>• That factoring is a way to simplify expressions and equations</li> <li>• That there are multiple ways to solve and represent quadratic equations.</li> </ul> <p><b>The student will know</b></p> <ul style="list-style-type: none"> <li>• That there are two special cases in factoring trinomials <ul style="list-style-type: none"> <li>○ Perfect square trinomial</li> </ul> </li> </ul>

○ Difference of squares

- The first step in factoring is to determine the greatest monomial factor

**The student will be able to:**

- recognize patterns of difference of squares and perfect square trinomials
- factor polynomials by applying general patterns

## Professional Development

<b>Grade Level, Discipline, &amp; Author</b>	<b>Sample KUD Goals</b>
<p>K-12 Teacher &amp; Educational Leader Professional Development Session, “Revamping Learning Goals to Support Differentiation,” by Jennifer Kumpost</p>	<p><b>The participant will understand that:</b></p> <ul style="list-style-type: none"> <li>• Essential understandings are vital in helping students make sense of isolated facts and see relevance in a particular skill.</li> <li>• In order to comprehensively and effectively plan curriculum, the curriculum developer must first identify the intended specific results of that curriculum (Wiggins &amp; McTighe, 2005).</li> <li>• “Unless we begin our design work with a clear insight into larger purposes[,]” it is not likely that understanding will occur (Wiggins &amp; McTighe, 2005, p 15).</li> </ul> <p><b>The participant will be able to:</b></p> <ul style="list-style-type: none"> <li>• Construct clear learning goals that state what students should <b><u>K</u>now</b>, <b><u>U</u>nderstand</b>, and be able to <b><u>D</u>o</b> as a result of a unit or lesson.</li> <li>• How to differentiate between facts &amp; topics and concepts.</li> <li>• How to differentiate between <b><u>K</u>now</b>, <b><u>U</u>nderstand</b>, and <b><u>D</u>o</b> learning goals.</li> </ul> <p><b>The participant will know:</b></p> <ul style="list-style-type: none"> <li>• Distinguishing characteristics of Understand, Know, and Do learning goals</li> </ul>
<p>K-12 Teacher &amp; Educational Leader Professional Development Session, “Impacts of Mindset on Teaching and Learning,” by Jennifer Kumpost</p>	<p><b><u>Learning Goals</u></b></p> <p><b>The learner will understand that:</b></p> <ul style="list-style-type: none"> <li>• An individual’s mindset can shape the ways that person perceives challenges, determine the person’s belief in the power of effort and resilience in the face of setbacks.</li> <li>• A teacher’s mindset can shape perception of students and learning needs, approaches to teaching, and development of student mindsets.</li> </ul> <p><b>The learner will be able to:</b></p> <ul style="list-style-type: none"> <li>• Identify fixed mindset responses to a given situation and formulate new growth mindset responses.</li> </ul> <p><b>The learner will know:</b></p> <ul style="list-style-type: none"> <li>• Characteristics of individuals with growth mindsets</li> <li>• Characteristics of individuals with fixed mindsets</li> </ul>