

# ***Depth of Knowledge: An Effective Tool for Educating Students***

*By Elizabeth Marconi, Chelli Smith, and Doug Lombardi*

In order to ensure student learning at the highest levels, practices within our classrooms must be comprehensive and rigorous. Furthermore, students who are provided with comprehensive and rigorous learning opportunities perform better on state achievement tests than those who don't. In an effort to create these positive learning opportunities and ensure that the standards are accurately assessed, the Nevada Department of Education has adopted Norman Webb's Depth of Knowledge (DOK) levels. The Department of Education feels the DOK levels not only provide for a greater depth and breadth of learning, but also meet the requirements of academic rigor required by No Child Left Behind.

***These DOK levels will be incorporated into all of Nevada's state tests starting in 2010, with field test items leveled to DOK in 2009.***

## ***A Familiar Face***

DOK is familiar territory to Southern Nevada's teachers because DOK reinforces exemplary classroom practice and is consistent with both the *Components of an Effective Lesson* and *Teacher Expectancies*. Most teachers learned about Bloom's Taxonomy in pedagogy classes during their teacher preparation program. In Bloom's Taxonomy, different verbs represent six levels of cognitive processes. However, unlike Bloom's system, the DOK levels are not a taxonomical tool that uses verbs to classify the level of each cognitive demand. The DOK level is determined by the degree of mental processing required by the student to meet the objectives of a particular classroom activity. In the case of assessment, DOK is the cognitive demand required to correctly answer test questions. It is important to note that DOK levels will replace the ability levels (A1, A2, and A3) on the state standardized tests as DOK more closely reflects the depth and breadth we would like our students to achieve in the classroom.

## ***What Are DOK Levels?***

The DOK level describes the kind of thinking involved in the task, not whether it will be completed correctly. A greater DOK level requires greater conceptual understanding and cognitive processing by the students. Therefore, on average, students who reach greater DOK levels more regularly will have increased student achievement.

***Level 1*** involves recall and the response is automatic. Students either know the answer or not. Level 1 activities require students to demonstrate a rote response, follow a set of procedures, or perform simple calculations.

***Level 2*** activities are more complex and require students to engage in mental processing and reasoning beyond a habitual response. These activities make students decide how to approach the problem, involving interpreting and developing relationships among concepts.

***Level 3*** activities necessitate higher cognitive demands than the previous two levels. At Level 3 students are providing evidentiary support and reasoning for conclusions they draw. In most instances, having students explain and justify their thinking is at a Level 3. Typically, Level 3 activities have more than one correct response or approach to the problem.

***Level 4*** includes those tasks in which students must demonstrate reasoning, planning, and developing connections within and beyond a content area. These activities usually occur over an extended period of time and cannot be assessed on the Criterion-referenced Tests (CRT) or High School Proficiency Exam (HSPE). However, these tasks should be incorporated into the curriculum since it is this type of thinking we want to encourage from all of our students.

Not all state standards and benchmarks support DOK levels 3 and 4. Each of the benchmarks has a "ceiling" DOK level depending on the content. Specific information about the ceiling DOK level for each benchmark can be found on the Nevada Department of Education website.

DOK levels are ***cumulative***. For example, a DOK level 3 activity will probably contain DOK level 1 and 2 elements; however, DOK levels are ***NOT additive***. You cannot create a DOK level 2 activity with only DOK level 1 elements (i.e., a DOK level 1 + DOK level 1 does not equal a DOK level 2)

*(Continued on page 4)*

## Using DOK

Following are some questions to consider when analyzing your curriculum tasks for DOK.

1. *What level of work are the students most commonly required to perform?*
2. *What is the complexity of the task rather than the difficulty?*
3. *What are all the skills and knowledge scaffolding that the students will have already needed to build to complete the task?*

<i>Examples of what Depth of Knowledge look like in the classroom</i>				
<i>Content Area</i>	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
<b><i>Elementary Language Arts</i></b>	Sort known words as quickly as possible.	Find words in text that illustrate a defined pattern. (Word Hunt)	Create an open sort and define the rule and explain.	Illustrate through authentic writing stability in pattern and content of identified stage.
<b><i>Elementary Mathematics</i></b>	Collect data on the number of teeth lost by students in one 2 <sup>nd</sup> grade classroom.	Organize these data using a graph or chart (e.g., a line plot).	Using the graph, predict how many teeth would be lost by all the 2 <sup>nd</sup> grade classes in the schools and justify your answer.	Come up with a model to estimate how many teeth are lost by 2 <sup>nd</sup> grade students in the United States in one year. Include the type of data you would need to collect and explain how your model works.
<b><i>Elementary Interdisciplinary</i></b>	List the ingredients of a peanut butter and jelly sandwich.	Collect the ingredients for a peanut butter and jelly sandwich and write the recipe.	Investigate how many people are coming to dinner and formulate the appropriate amounts of ingredients for 8 people.	Design a plan to feed the entire class using the following information: one jar of peanut butter makes 10 sandwiches, one jar of jelly serves 8, and one loaf of bread contains 18 slices.
<b><i>Middle School Science</i></b>	Define the following terms: electrical generator, electrical motor, magnetic field, and electrical current.	Compare and contrast how an electrical motor operates to how an electrical generator operates.	Design and conduct an experiment to demonstrate that electrical currents produce magnetic forces.	Research and design a system to lift heavy objects using the conversion of electrical energy to mechanical energy. Build a prototype of the system using materials found in the classroom.
<b><i>U.S. History</i></b>	Name the U.S. presidents in order.	Using the left and right political continuum, categorize the presidents of the 20 <sup>th</sup> and 21 <sup>st</sup> centuries according to their political standing.	Hypothesize how Dwight D. Eisenhower would react to today's world political situation.	Analyze the strategies and effectiveness of George H. W. Bush's war strategies in the Persian Gulf with the war strategies of George W. Bush in Iraq.
<b><i>High School Music</i></b>	Name several composers from the Baroque and Classical periods.	Describe differences between the Baroque and Classical periods.	Critique, compare, and contrast pieces of music from the Baroque and Classical periods.	Choose a period and develop a 16 measure piece of music from that style.

# Depth of Knowledge in Literacy

By SNRPDP Elementary Literacy Trainers

Below is an example of a primary and intermediate lesson that is aligned to Depth of Knowledge levels. The lessons use both fiction and informational text. Most teachers are already using DOK in their classrooms; the following illustrates how to label specific lessons.

## **“All About Insects” from The Six Minute Solution: A Reading Fluency Program** **Primary Lessons**

“An insect is a tiny animal. It has six legs. It has a body. An insect’s body has three parts. Most insects have wings. Insects do not have a backbone.

There are more than one million kinds of insects. They are found all over. Insects can live in hot places. They can live in cold places. There are many kinds of insects. Insects do not look alike. They come in many colors. They also come in many shapes.

Insects have a life cycle. Each insect starts life as an egg. The egg hatches. It becomes a larva. A larva looks like a worm. It has a mouth. But it does not have eyes. A larva likes to eat. It eats and eats. The larva sheds its skin. Later, the larva spins a cocoon. It lives in the cocoon. Now it is called a pupa. After a while, the pupa leaves its cocoon. Then, it is an adult insect.”

### **DOK 1:**

Recall the four stages of an insect’s life cycle and label them in the correct sequence using a Flow Map. (egg, larva, pupa, and adult)

### **DOK 2:**

Observe two different insects over a period of a week and create a Double Bubble Map of their similarities and differences, including behavior, eating habits, physical traits, etc. Orally

compare the data.

### **DOK 3:**

After listening to the teacher read Eric Carle’s *The Very Quiet Cricket*, *The Grouchy Ladybug*, *The Very Lonely Firefly*, *The Very Clumsy Click Beetle*, and *The Very Hungry Caterpillar* over time, use the information from these books, the passage above, and other non-fiction material to create an informational poster about one insect.

### **DOK 4:**

At the culmination of the insect unit, assume the perspective of an insect. Create a journal entry in which you survive a 24 hour period in our classroom. Create a second journal entry in which you survive a 24 hour period on our playground. In a third journal entry, prove which habitat is best suited for your survival.

## **“Insects” from The Six Minute Solution: A Reading Fluency Program** **Intermediate Lessons**

“Insects belong to a huge group of animals. This group is called arthropods. All arthropods have a hard outer coat called an exoskeleton. This exoskeleton protects the soft insides of an arthropod’s body.

An adult insect’s body is divided into three sections: a head, a thorax, and an abdomen. The insect’s head contains mouthparts, eyes, and antennae. The thorax is the middle part of an insect’s body. Three pairs of jointed legs are found on the thorax. Insects have six legs. Two pairs of wings are also attached to the thorax. The abdomen is the bottom part of an insect. It is the biggest part of the body.

Most insects undergo a change.

This change is called metamorphosis. The metamorphosis has four stages: egg, larva, pupa, and adult. Most insects lay eggs. Each egg then turns into a larva. After several molts, the larva enters the pupa stage. During this stage, it does not eat or move. When the pupa stage ends, the adult insect emerges.

There are thousands of insects in the world. More than 900,000 kinds have been found. That is more than three times as many other animal types put together. Many more new insects are discovered every year.”

### **DOK 1:**

Draw an insect and label its body parts, including head, thorax, abdomen, mouthparts, eyes, antennae, legs, and wings.

### **DOK 2:**

Construct a model showing the four stages of metamorphosis.

### **DOK 3:**

Use the information from the passage above, the internet, and other non-fiction material to research and explain the habitat, eating habits, lifespan, etc. of a specific insect. Orally share your written work.

### **DOK 4:**

The last paragraph of the article mentions that there are three times as many insects as other animal types put together. Our school has an insect problem with ants and cockroaches. Our task is to design an eco-friendly method to get rid of these pests. Work in groups to identify solution paths, solve the problem, and report the outcome. Share results with peers.

## Accessing Higher DOK Levels Using Think-Alouds

By Deborah Baughman, The Standards Company LLC

**Depth of Knowledge (DOK)**, originally created by Norman Webb, can best be described as a tool used to measure the cognitive demand of instructional objectives and assessment items. Webb first introduced it for the purpose of aligning assessment to standards in the area of cognitive rigor. While this is all good to know, it does little to help us understand how DOK can be practically applied within the classroom.

While No Child Left Behind has addressed cognitive demand with regards to standards and assessments, the Act has not addressed cognitive demand in the area of classroom instruction. Yet, there must be instruction of the standards for assessment to take place—students must first be instructed before they are assessed. If students are to master a standard which requires the type of cognitive demand of DOK level 3, for example, then we must instruct students in such ways that they can reach this mastery. Practically speaking, how is this done?

### THINK-ALLOUDS AS A TEACHING STRATEGY

One way we can acclimate students to higher DOK activities is by using think-alouds, a simple cognitive strategy developed to help students access meaning associated with higher-level thinking processes and skills. For reading comprehension lessons, we can use think-alouds as a teaching strategy in which we share the thought processes we undertake when comprehending text. Think-alouds can therefore help model how good readers think before, during, and after reading. According to author Jeffrey Wilhelm, “Think-alouds make invisible mental processes visible to children.”

Eventually, our students can use think-alouds in collaborative group settings and independently as a learning strategy. According to Wilhelm: “While reading, teachers model their thinking by voicing all the things they are noticing, doing, seeing, feeling, and asking as they process the text. Students can then ‘borrow’ the various strategies teachers use and apply them in their own reading.”

### THINK-ALLOUDS AND DEPTH OF KNOWLEDGE

To help students achieve at all four DOK levels, we can share our thoughts that correspond to the thinking processes required at each level. Our goal is to

model for students cognitive thought processes so that students can eventually master levels 2, 3, and 4. Although an important level in its own right, we do not need to spend much time modeling level 1.

We should not, however, expect students to demonstrate mastery of levels 3 and 4 on assessments unless the standard calls for it. Our goal is to support, guide, and practice the use of higher DOK levels until mastery is required.

### EXAMPLES

Below are some examples of think-alouds and questioning strategies using the story *The Quiltmaker’s Gift*. When reading these examples, we should remember that the mere act of listening to teachers model thinking processes is not a higher DOK activity on the part of students; rather, think-alouds are a cognitive strategy designed to teach students how to engage in such thinking on their own.

DOK 1: I see that the quiltmaker sews. I can tell from the pictures and also the book says that she was “sewing away day after day.” What else do I know so far? I know where she lives. In the mountains. It says that she had a house in the “mountains up high,” and I can see her house in the picture.

*(This example models recall of simple and literal information. As stated earlier, such modeling of level 1 activities is probably unnecessary.)*

DOK 2: The king was frowning. Hmm... I don’t really know what “frowning” means. When I don’t know what a word means, I use clues from the story to help me. The clues I use are pictures and other words in the story. So, I’m going to try that now to figure out what that word means. I can see in the picture that the king looks sad. And it says here that “still, the king did not smile.” So, those clues make me think that “frowning” looks like this (teacher makes a frown imitating the king).

*(This example shows the use of context clues to determine meanings of unknown words. Students are interpreting text but knowledge remains at the literal level and does not go “beyond” the text).*

DOK 3: Now that I have finished reading the story, I’m going to figure out the theme. Now I remember that a theme is an idea that reappears throughout a story. When I try to identify a theme, I think about the things that happened in the beginning, middle, and end. And I also pay close attention to the pictures and the things that characters say or do. In the beginning of this story, the king did not like her. But in the end, when she gave the king a quilt, they became friends. How do I know this? Well, I think about my own experiences and friends. I know that I often give them things. She also

made friends with other characters in the story like the bear and the sparrow. She treated them kindly and lovingly, which I know from my own life is what friends do. So, I think one of the themes of this story is friendship, because acts of friendship appear throughout the story.

*(This example shows abstract theme identification using reasoning. Students go “beyond” the text and make connections. There are also several different answers).*

DOK 4: I notice that the themes of friendship, kindness, generosity, and love are similar. And gifts, smiles, and hugs, which I saw in the story, all have to do with all of the themes. I have read other books where there are gifts, smiles, or hugs. *The Quiltmaker’s Gift* made me think of them. One book is even from another country, Russia. But I think the themes are the same, and the characters are like the ones in *The Quiltmaker’s Gift*. And even though the stories have the same themes, they were written by different people.

Now, let’s examine some books we’ve read. What are some books that have these themes in them? Yes, *Stellaluna*, *Thundercake*, and *Officer Buckle and Gloria* all have similar themes. Why do you think so many different authors write about these themes? What about *Thundercake*, which takes place in Russia? Do people in Russia also experience friendship and kindness?

*(This example shows complex analysis of the connections among texts—complex considering the grade level of the students. It also shows students examining common themes found across texts, including text from other cultures. Student activities centered on such level 4 thinking would be large-scale projects extending over a lengthy time period).*

Think-alouds are a powerful teaching strategy that we can use more often in the classroom. By incorporating depth of knowledge into our think-aloud strategy, we can equip students with the tools needed for higher-level critical thinking, enhance our understanding of depth of knowledge, and strengthen our teaching effectiveness.

### REFERENCES

- Brumbeau, Jeff, *The Quiltmaker’s Gift*. 2001. New York: Scholastic Press.
- Webb, Norman L. “Alignment of Science and Mathematics Standards and Assessments in Four States.” National Institute for Science Education, University of Wisconsin-Madison. August 1999.
- Jeffrey Wilhelm, *Improving Comprehension with Think-Alouds: Modeling What Good Readers Do*. New York: Scholastic Press.

# DEPTH OF KNOWLEDGE IN K-5 SCIENCE

Science presents the perfect opportunity for students to interact firsthand with materials, ask questions, collect, organize, interpret data, state claims and support them, and connect their understandings to the world around them. This enables students to think at a higher cognitive level. The following are some examples of science tasks and questions as they relate to the different DOK levels.

## Level 1 – Recall

Many times we ask our students to label the parts of a plant, measure the width of their desks, or list five animals that are mammals. When we present such tasks to our students we are simply requiring them to recall or reproduce knowledge in a rote manner.

When considering the Depth of Knowledge levels as they relate in science, these types of tasks would fall under DOK 1 or Depth of Knowledge Level 1. Depth of Knowledge Level 1 tasks require students to recall or recognize facts or information, perform simple procedures (“recipe-type” procedures), identify, calculate, or measure something.

Some examples of Level 1 tasks are:

- make a list of objects that are solids
- draw a diagram of the water cycle
- give the definition of a vocabulary word

## Level 2 – Skills and Concepts

DOK Level 2 tasks focus on the use of skills or concepts. They require more than one step and are more complex than Level 1.

Level 2 tasks in science include:

- describe the difference between a rock and a mineral and give an example of each
- choose two insects that you have observed and compare them
- make observations of your terrarium
- collect and display data while working with balls and ramps

## Level 3-Strategic Thinking

Strategic thinking and problem solving that necessitate deep knowledge, reasoning, planning, and evidence to support results are the components of a DOK Level 3 task. It is quite possible to have more than one answer at this level, therefore students would be expected to explain and justify their thinking to questions or tasks at this level.

Consider the following question. “Is toothpaste a solid or a liquid? Explain and justify your answer.” This is far more

complex than the examples shared in levels one and two as it requires students to use reasoning, justification, and evidence to support their response.

There are times when we present students with challenges in science. One such challenge is to determine the “mystery chemical.” Students must do several things in order to figure this out. They will have to conduct tests to collect data, analyze it, make a claim, and support their claim with evidence in order to verify the “mystery chemical.” Because of the complexity, this procedure would be an example of a Level 3 question.

## Level 4 – Extended Thinking

Questions are naturally generated by students during science. DOK Level 4 questions and tasks require extended thinking at a higher cognitive level. Students must make connections within a content area or among other content areas, and then devise an approach regarding how the problem can be solved among many possible alternatives. Many performance assessments and open-ended questions that require considerable thought are Level 4. Questions at this level often require an extended period of time to complete; however, time is not the only determining factor for a task or question to be labeled as a Level 4 question.

Instructing students to select a question to investigate, set up and conduct an investigation, collect, organize, and analyze the data, and formulate a conclusion is an example of a Level 4 activity.

Posing a scenario such as: “One of the instruments in an orchestra is too soft for everyone in the theatre to hear. The orchestra member would like to devise a way to make the instrument louder so everyone will be able to hear it.” Students would be able to work in small groups to generate ideas and possible solutions, plan how they will go about their task, put their plan into action, and share their ideas with an audience.

## Depth of Knowledge During Science Instruction

Mentioned above are examples for each of the DOK levels in science. As teachers of science, it is essential to take some time to reflect on the questions you pose and the tasks you require your students to do. Where do the majority of your questions fall? Do you see a mix of questions from different levels? If your questions and tasks are mostly DOK 1s and 2s, think about how you might modify them to DOK Levels 3 and 4 to get your students to thinking more strategically.

## Sample of Depth of Knowledge Levels Solids and Liquids

### Level 1

- What is a solid?/What is a liquid?
- Identify the properties of a solid./ Identify the properties of a liquid.
- Using the list provided, identify which are solids and which are liquids.
- Draw a picture of your solid/liquid.

### Level 2

- Describe the difference between a solid and liquid. Give an example of each.
- Compare two solids. /Compare two liquids.

### Level 3

- Is toothpaste a solid or a liquid? Explain and justify your answer.

### Level 4

- We have been working with solids and liquids over the past few weeks. Design a plan, carry out the investigation, and share your results with classmates.

## Sample of Depth of Knowledge Levels Rocks and Minerals

### Level 1

- What is a rock?/ What is a mineral?
- Identify properties of rocks.
- Using the list provided, identify which are rocks and which are minerals.
- Measure the circumference, diameter, and depth of your rock.
- Draw a picture of your rock/mineral.

### Level 2

- Describe the difference between a rock and a mineral and give an example of each.
- Compare two minerals. /Compare two rocks.
- Order your minerals from hardest to softest.

### Level 3

- Of the four rocks you are working with, determine which ones contain the mineral calcite. Support your claims with evidence from your investigation.
- A friend has given you a bag of rocks. You have noticed that some are smooth while others are rough. Where do you think your friend found these rocks? Support your answer.

### Level 4

- We have learned many things about rocks and minerals over the past few weeks. Design a model that will show how they can be changed and relate it to another cycle. Be prepared to share with your classmates.

# A Quest of Depth of Knowledge in Elementary Mathematics

The Nevada Department of Education has begun to rollout a change in ability level descriptors to increase student learning that result in increased student achievement. Since the initial development, the Criterion Referenced Tests (CRTs), including the elementary mathematics sections, have assessed student knowledge on three levels; conceptual, procedural, and problem solving, based on the National Assessment of Educational Progress (NAEP) descriptors. In order for student learning and to accurately assess that our students are meeting educational standards, the state of Nevada is adopting Norman Webb's Model of Alignment and Depth of Knowledge levels. Norman Webb's Depth of Knowledge is a measure to determine what students know; and to what depth they reflect that knowledge. There are four Depth of Knowledge levels that permeate into all subject areas. Following are some examples for elementary mathematics.

## **DOK Level 1**

### **Recall and Reproduction**

**Determine the perimeter or area of rectangles given a drawing or labels.**

## **DOK Level 2**

### **Skills and Concepts**

**Classify plane and three dimensional figures.**

## **DOK Level 3**

### **Strategic Thinking**

**You have a given amount of money.**

- Show the different combinations of coins to make that amount of money.
- Show the different combinations of bills and coins to make that amount of money.
- Use the fewest possible number of coins to make that amount of money.

## **DOK Level 4**

### **Extended Thinking**

**Collect data on the population of your school over the last ten years. Graph the information. What would you predict the school population will be in six years? What trends do you see in the population and what are a few reasons for the trends? Would enrollment figures suggest a need to increase the size**

**of your school facility in the next ten years? Why or why not?**

Up to this point, our perspective on assessments has been to focus on what we want our students to know. Assessments have been a target. We teach what we want our students to know, and we hope they succeed at hitting the target. Our perspective will now need to change. Assessments now will be the ceiling, the highest level a standard can be assessed at to measure a student's knowledge. The goal in this change of perspective is to promote higher order thinking for all students.

This change in assessment must also be reflected in a change in our instruction. All teachers have become acutely aware of the use of Bloom's Taxonomy within our classroom, but Depth of Knowledge is not a taxonomical tool. Depth of Knowledge focuses on how deeply a student has to know the content in order to answer a question, perform a task, or generate a product. As educators, we need to be cognizant to incorporate the Depth of Knowledge levels into our lesson planning and implementation. Below examples of data analysis activities are outlined by level.

## **DOK Level 1 Activity**

**Retrieve information from a table or a graph.**

**Explanation:**

**The activity recalls information that requires only one step to complete the task.**

## **DOK Level 2 Activity**

**Retrieve information from a table or a graph and use it to solve a problem requiring multiple steps.**

**Explanation:**

**This activity requires basic application of skills and also requires deeper knowledge than just giving a definition, such as how and why.**

## **DOK Level 3 Activity**

**Draw conclusions from observations or data, citing evidence.**

**Explanation:**

**This activity requires deep understanding as exhibited through planning and citing evidence.**

## **DOK Level 4 Activity**

**Conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results.**

**Explanation:**

**This activity requires complex reasoning, planning, and thinking generally over extended periods of time for an investigation.**

The Criterion Referenced Test (CRT) will assess student knowledge at DOK levels 1, 2, and 3. The DOK level assigned to a problem indicates how deeply the student will need to apply their knowledge of the content. In the problems listed below, focus on how deeply a fifth grader's knowledge of number sense will need to be to answer the problem successfully.

**Which expression could be used to check the answer to 63 divided by 7?**

- $63 + 7$
- $63 \times 9$
- $7 + 9$
- $7 \times 9$

### Level 1: Recall and Reproduction

*Recall of a math fact asked in a non-traditional way.*

**Mario has 20 packages of building blocks and each package has 12 blocks. He gave two packages of blocks to his cousin. What is the total number of blocks Mario had left?**

- 18
- 30
- 216
- 360

### Level 2: Skills and Concepts/ Basic Reasoning

*Decision point on calculations beyond the traditional algorithm.*

Although Depth of Knowledge level 4 (Extended Thinking/ Reasoning) will NOT be assessed on the standardized tests, a focus on this level will enable students to incorporate all DOK levels into an activity. Our goal as educators is to prepare our students to become responsible, productive citizens. Only by using effective habits of mind and higher order thinking skills in classrooms today will students be prepared for their future in 21st century society.

# What Does a Depth of Knowledge (DOK) Level 4 Technology Activity Look Like?

Having trouble envisioning what a technology-infused lesson may look like for your specific content area? Some content areas seem a natural fit for effective technology use, while others seem to present a challenge. Social studies, science, and literacy are areas where one can easily visualize integrating technology; while math, the arts, physical education, and electives may need more of a creative twist. See how Jon Felix incorporates technology in his Virgin Valley High School woodworking class to maximize student skills and achievement with this DOK level 4 activity.

[rpd.net/class-resources](http://rpd.net/class-resources)

How might you adapt this DOK Level 4 activity to your own content area? Having students use Excel spreadsheets to create their own forms, charts, and graphs; producing videos for presentations; and even incorporating tools like *Google Earth*, *Google Earth's SketchUp*, and *Google Earth's 3D Ancient Rome* to enhance current traditional activities are some ways to incorporate technology into your content objectives. What a way to create truly interactive, real-world lessons for your students!

## Keep in Mind...

- **DOK is a tool to promote student achievement**
- **DOK is a scale of cognitive demand**
- **DOK level is determined by the item/standard, not the students' ability**
- **DOK is determined by the context, not the specific verb being used**
- **DOK 1 + DOK 1 does not equal DOK 2**

*Answers - 1) DOK 1 2) DOK 2 3) DOK 3 4) DOK 2 5) DOK 1*