

Got Math?

Southern Nevada
Regional Professional
Development Program

NACS MINI-SERIES
HS/MS #8

NEVADA ACADEMIC
CONTENT STANDARDS



Based on Common Core

A Newsletter from the Secondary Mathematics Team www.rpdp.net

Unwrapping the Math Standards - Common Core State Standards

The task of digging deeper into the Nevada Academic Content Standards (NACS) for mathematics suggests that teachers understand the standards and can “unwrap” them and **organize them into units or instructional context based on identification of concepts and skills**. Teachers often discover that unwrapping one standard may have many components, but the process helps focus instruction. It can help to create a “mindset” of preparing for instruction. Teachers may also find that they have always been “unwrapping” standards when they prepared for instruction, even if done mentally without the written process.

The following suggestions help teachers begin the process.

1. Whether working alone or with grade-level department colleagues, the first unwrapping step is to select one you wish to unwrap. Do not try to do them all at once. Keep it simple at first; **choose one standard** and its related learning targets that you are familiar with and begin there.
2. Read carefully through the standard and **underline the key concepts** (important nouns and noun phrases) and **circle the skills** (the verbs). Remember, the **concepts are what the students must know**, and the **skills or performance verbs are what they must be able to do**. If a verb is in the “-ing” form, and it is clearly a skill students need to be able to do, circle it as is or list it in its root form. Some teachers use different colored pens/highlighters for this step.
3. The next step in the process is to **organize the identified concepts and skills** in a way that makes the most sense to you. Here, it is helpful to create a **graphic organizer** that represents the standard and its related learning targets. You may prefer to outline, create a bulleted list, create a concept map, or some other variation of graphic organizers.

concepts

The question teachers ask themselves is, “**What are the major concepts** under which I can ‘plug in’ all the minor ones?” The **key concepts** (nouns) may be fairly easy to organize if they are organized in the CCSS under major headings. If they are not already organized, simply **list the nouns** down the left side in the order they appear in the standards. Then **group all related concepts** together, **determine your own headings**, and **list the related concepts** beneath them. This is a lot like outlining a passage of text where you either copy on paper the evident major headings as provided or decide your own headings if they are not provided. Don’t forget to include **vocabulary** and **links to prior knowledge** and skills. It is **also helpful** to list the “**Big Ideas**” and “**Essential Questions**”. For example, in *A.REI.4 - Solve quadratic equations in one variable*, they may be listed as:

Big Ideas

- Quadratic equations can be written in various forms.
- There are various methods we can use to solve quadratic equations.
- The quadratic formula can be derived.

Essential Questions

- What is a quadratic equation?
- How can algebra be used to solve quadratic equations?
- How many solutions can quadratic equations have? Are all solutions always real numbers?
- How can I decide which method to use to solve quadratic equations?

skills

Usually the skills are simply listed in the same order in which they appear in the standards. Some teachers write the “**target**” of the skill after it. The “target” is the level of knowledge or skill that the student must apply through a particular skill standard. For example, if the **concept** is simple fractions, the **target** might be written as: simple fractions (**fourths, thirds, halves**). Another example might reference the standard *6.RP.3c-1 - Find a percent of a quantity as a rate per 100*. The **knowledge targets** (know 100% equals one whole, know percent means “out of 100”, know how to find the rate per 100, know how to convert a percent to a decimal and a decimal to a percent), and the **reasoning targets** (convert ratios to percents), help focus the instruction at the level required for grade 6.

4. An important component of appropriate instruction is accomplished by **creating assessments** (both formative and summative) **before instruction** that will help determine if the students “got it.” What will the assessment look like? How will teachers know that students understand the material and can perform the desired tasks after the instruction? This **backwards assessment model** can then be used to focus instruction and activities that will improve **student achievement**. Teachers can keep track of the goal during instruction by asking themselves, “Am I providing instruction and activities that help make students successful on various tasks or skills that show they have learned the lesson?”
5. The instruction is then planned to determine what **specific lessons, activities, or units of instruction** will teachers use to teach their students the **concepts and skills**. This is where teachers can personalize the graphic organizer by being as general or specific as they choose in determining what **instructional materials, lessons, activities, and text chapters/sections** they will use. There are many resources available for this step, including: textbooks, teacher resource packages, reference materials, internet resources, district or school curriculum guides and pacing suggestions, and colleagues.



Math Resources

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Unwrapping the Math Standards - Common Core State Standards (Continued)

