

<p>HW 2/1/10: Complete at least 15 points from 6.1 and 15 points from 6.3</p>
<p>1 POINT 6.1 (p.303) #3-7, 18-22 6.3 (p.314) #3-6, 11-18</p>
<p>2 POINTS 6.1 (p.303) #8-12, 23-27 6.3 (p.314) #7-10, 15-18</p>
<p>3 POINTS 6.1 (p.303) #13-17, 28-32 6.3 (p.314) #19-22, 32-35, 67-70</p>
<p>4 POINTS 6.1 (p.303) #52-57. 63-64 6.3 (p.314) #36-39, 59-62, 71-74</p>

***** FOR PURPOSES OF SAMPLING THIS TASK, LESSON PLANS FOR LESSONS 2- HAVE BEEN REMOVED*****

Planning Commentary

1. What is the central focus of the learning segment? Apart from being present in the school curriculum, student academic content standards, or ELD standards, why is the content of the learning segment important for your particular students to learn? (TPE 1)

The central focus of the learning segment is for the students to understand the concept of percents and how to use them to find percent of a number. These concepts and skills are especially important for my students to learn because they will someday be using percents in relevant applications of everyday life or their future career; such as in grocery and department stores to find a sale discount, running a business when an owner marks up wholesale prices, or using tax and tip in their everyday use of money. Apart from a money application, my students will need to use percents to compare measurements, amounts, and items.

The focus continually being addressed is that any percent represents a part of a whole (100%). This concept will prompt the students to use their reasoning to compare percents with fractions and decimals, which also represent parts and wholes. Once they have mastered the concept of what a percent represents the focus then shifts to procedures where the students actually learn how to convert between percents, fractions, and decimals, and then calculate percents of numbers. It is important for my students to learn multiple ways of calculating percent of a number because it will allow them to build on and practice using the many skills they are already familiar with, such as computations with fractions, decimals, and proportions; and also uses of variables in equations. The students will be able to take what they have already learned and build it into something new, which is an understanding that is fundamental to mathematics, as well as other areas of thinking.

2. Briefly describe the theoretical framework and/or research that inform your instructional design for developing your students' knowledge and abilities in both mathematics and academic language during the learning segment.

Before I begin teaching something new, it is important to get a sense of my students' prior knowledge and abilities of the material. To assess their knowledge of content and language, the Vocabulary Self-Inventory (Adapted from the Knowledge Rating Scale in Reading and Learning Strategies Middle Grades through High School by Lenski), followed by discussion, will allow me to see what vocabulary the students understand, as well as what concepts they are familiar with. The Quick-Think (Adapted from the Quick Write in Improving Adolescent Literacy by Fisher) has this same purpose, to build on my students backgrounds and see what they already understand about percents, as well as assess their ability to use academic language when discussing percents.

Throughout the lesson it is important to make sure the students are going through a process of input-output (a theory from Tools for Teaching by Jones) so that the students are taking in information, but also using this information to process what they have learned. Input tasks such as notes or homework review can be followed by output such as practice problems, the Math Sort (Adapted from Reading and Learning Strategies Middle Grades through High School by Lenski), the Exit Slip and activities such as the Percents on Planet Pluto W.S. and the M&M Math W.S.

To support academic language development throughout the learning segment, strategies such as sentence frames (Improving Adolescent Literacy by Fisher) can help students structure grammatically correct questions and writing. Think-Pair-Share (102 Content Strategies for English Language Learners by Reiss) and my grammar and vocabulary through questioning (Improving Adolescent Literacy by Fisher) also support students' verbal and listening modalities of academic language.

Visual Instructional Plans-VIPs (Tools for Teaching by Jones) such as the 100-grid and the proportion (is/of= $\frac{\quad}{\quad}$ /100) also help develop students' knowledge and abilities because it provides them with a more concrete example of an abstract idea, and it provides a support for skills they already have, but just need guidance mastering.

Lastly, it is important to assess what students have learned throughout the learning segment to inform my next steps as a teacher. A strategy such as an Exit Slip (Improving Adolescent Literacy by Fisher) is a quick way to measure mastery of important concepts and skills.

3. How do key learning tasks in your plans build on each other to support student procedural fluency, conceptual understanding, mathematical reasoning, positive dispositions toward mathematics, and the development of related academic language? Describe specific strategies that you will use to build student learning across the learning segment. Reference the instructional material you have included, as needed (TPEs 1, 4, 9)

Procedural Fluency:

Some of the procedures that students will learn during this learning segment are to convert between fractions, decimals, and percents. The first introduction to conversions is in the notes and class discussion of Lesson 1, where students will use their prior knowledge of equivalent fractions to write fractions with a denominator of 100 to create a percent, and their previous knowledge of dividing fractions to create decimals which can be written as percents. Then, students learn a shortcut procedure to convert between decimals and percents, where you simply move the decimal two places to the left or right. This skill will be practiced in the learning task where students do practice problems in their interactive notebooks. Then, in the Math Sort, students will be converting between common fractions, decimals, and percents (although, probably more mentally, rather than in writing). The exit slip question #2, #3, #4 and the homework learning tasks will again provide more practice at converting back and forth between fractions, decimals, and percents.

Another focus of my learning tasks is for the students to learn more than one way of finding percent of a number. The strategies that will support learning these procedures take place in the interactive notes and discussion in Lesson 2 where students write proportions with an unknown represented by a variable. They will use their procedural knowledge of cross multiplying to write and solve the proportions. These procedures are then reinforced in the Percents on Planet Pluto worksheet and the homework, where students will again write and solve proportions to find unknown quantities. Lesson 3 notes and discussion introduce finding percent of a number using equations with percents written as fractions. We will then use the procedure of solving proportions using algebra (rather than cross multiplication) to derive the percent equation. Then, to solve the equation, students will need to use their procedural knowledge of multiplying and

simplifying fractions. The learning task that will reinforce these skills is the M&M Math worksheet where students will write equations with percents represented as fractions to solve for the unknown number of each colored M&M. More practice will also occur in the homework. Lesson 2 and 3 build on the procedures in Lesson 1 because the students will need to write percents as fractions before they solve the proportions and equations.

Conceptual Understanding:

The concepts focused on in the learning segment are the ideas that a percent represents a part out of a whole, and that a whole is written as 100%. In Lesson 1, a strategy to demonstrate this concept is the use of a visual representation of a 100-grid with boxes shaded in. During the notes and discussion, the students will become familiar with the phrases “per hundred” and “divided by 100” to help them first understand the concept of fractions/ratios representing the shaded boxes out of the whole grid, and then percents representing this same idea. To practice understanding this concept, the lesson will lead into the 2nd Math Sort where students will place percentage values into different categories of shaded 100-grids. The Exit Slip question #1 prompts students to use their conceptual understanding of 100% representing a whole, and #4 prompts students to understand the concept that 220% represents more than a whole. In Lesson 2 notes and the Percents on Planet Pluto worksheet, students build on the concept of parts and wholes by writing proportions where one side of the equal sign is a percent representation and the other side of the equal sign is a fraction representation of the same idea. In Lesson 3, the notes and M&M Math worksheet focus on the task of multiplying by a percent in an equation, which builds on these same concepts because finding percent of a number is finding a part of a whole.

Mathematical Reasoning:

The students will be using reasoning throughout the learning segment to convert between percents, decimals, and fractions, and to write proportions and equations. In Lesson 1, the notes and discussion on converting a fraction to a percent support mathematical reasoning because the students will reason that an equivalent fraction needs to be written for $\frac{4}{5}$ so that the denominator is 100 and can then be converted into a percent (per 100). Reasoning will also be supported when students develop a “shortcut” for converting between decimals and percents, as they first reason that a percent is simply a decimal with the decimal point moved two places to the right, and vice versa. The Exit Slip supports reasoning in questions #2, and #3 because students will need to logically infer that they should write decimals that are greater than 1 (100%) and less than .01 (1%). In Lesson 2 notes and discussion, student reasoning is prompted when we create a “conclusion” about converting sentences into proportions (i.e. “is” represents a part, “of” represents a whole, and “what” represents the variable). The Percents on Planet Pluto worksheet builds on this reasoning as students practice converting other sentences into proportions. Lesson 3 takes this reasoning even further in the notes and discussion as students deduce that the “is/part” pairs with the equal sign, and the “of/whole” pairs with the multiplication. This reasoning is reinforced through the M&M Math worksheet questions and equations.

Positive Dispositions toward Mathematics:

This learning segment provides students with a positive disposition towards mathematics because students are actively involved in their learning through discussions and activities, and they can relate to the learning in fun and useful ways. In Lesson 1, the

Vocabulary Self-Inventory allows students to feel confident in the words they already know well, and it brings curiosity about the words they aren't as familiar with. The Quick-Think in Lesson 2 builds on these same ideas about using students' prior knowledge to promote curiosity about mathematics and how it is applicable the real world. To promote positive dispositions, I will attempt to ask questions that gives students a feeling of success and provide confidence, rather than inundating them with questions that require a right or wrong answer. By having volunteers do the practice problems at the board in Lesson 1, students will gain a sense of being able to teach and learn from their peers, rather than needing to rely on the teacher, which lowers the affective filter. Another way I hope to lower the affective filter, and thus promote positive dispositions, is by allowing the students to work in pairs and small groups throughout the activities of the learning segment (Think-Pair-Share, Math Sort, Percents on Planet Pluto, M&M Math), where they will be able to ask each other questions and work through challenges together. The activities also provide students with positive dispositions toward mathematics because they are related to fun and relatable ideas, like traveling to another planet (Percents on Planet Pluto) and counting candy colors (M&M Math). Lastly, by providing the students with more than one way to find percent of a number (proportions and equations), math is more flexible and accessible for everyone.

Development of Related Academic Language:

To support students' development of academic language, I have provided learning tasks that address vocabulary, sentence and question structures, as well as other reading, writing, listening, and speaking techniques. The Vocabulary Self-Inventory addresses important content vocabulary that we discuss and define throughout the notes. The Math Sort requires students to use academic language to discuss concepts with their peers. In Lesson 2 the students have the opportunity to write using academic language about percents during the Quick-Think. The Percents on Planet Pluto worksheet requires students to read and decipher sentences throughout the text and form sentences. By providing the students with sentence frames, it helps support the writing of these question and sentence structures. In Lesson 3, the students again have the opportunity to practice writing questions, and their academic language development is also supported by having the students write a formal letter to Mars, Inc. using percents to support their argument. Aside from these specific learning tasks, throughout the learning segment the students are continually reading, writing, listening and speaking through notes, discussions, questioning, and interactions with peers.

4. Given the description of students that you provided in Task 1. Context for Learning, how do your choices of instructional strategies, materials, technology, and the sequence of learning tasks reflect your students' backgrounds, interests, and needs? Be specific about how your knowledge of your students informed the lesson plans, such as the choice of text or materials used in lessons, how groups were formed or structured, using student learning or experiences (in or out of school) as a resource, or structuring new or deeper learning to take advantage of specific student strengths. (TPEs 4, 6, 7, 8, 9)

The knowledge I have of my students greatly informed my lesson plans throughout this learning segment. To start with, my students are still very young at heart since they are 6th graders. To make the content fun and interesting for them, I have chosen text and

activities that are related to their interests, such as space travel in the Percents on Planet Pluto W.S. and candy for the M&M Math W.S. To introduce the lesson to my students, I know that it is effective to get a sense of what they already know, which is why I included the Vocabulary Self-Inventory and the Quick-Think to gain background knowledge about the content and also their experiences outside of school.

I am also taking into consideration my students different abilities throughout the learning segment. I have a wide range of needs, so I have included strategies that meet my high achievers, my struggling students, and everyone in-between. For example, the homework assignment for Lesson 1 has four different point levels of question difficulty, but each student must complete 30 points. This allows my high achievers to only do a few challenging problems, but also provides my struggling students with the opportunity to practice many problems that focus on mastering the basic skills. My seating arrangements also tailor to my students' individual abilities, as I have placed struggling students with higher achieving peers who will work well together to teach/learn from each other.

Providing sentence frames and a VIP also address my students with varying academic language proficiency because it supports their ability to translate text into math, and gives them an example to follow when I am not available to guide their independent work. One benefit is that this scaffold can also be removed as proficiency increases and students are able to translate sentences into text on their own.

When considering my students' content knowledge, I know that they have mastered the use of proportions, yet still need practice writing and solving one-step equations with variables. For this reason, I have chosen to teach multiple ways to find percent of a number. By using proportions, I am building on my students' strengths in new and deeper ways, and by using equations I am allowing continued opportunities for practice towards proficiency. Although both methods are being taught during this learning segment, eventually the students will be able to pick the method they are most comfortable with, thus eventually removing this scaffold.

The sequences of my daily learning tasks are also tailored to what I have discovered about my students throughout the year. First, they need modeling of new material (whether it be with new content or language), which I address with examples during the notes. Then, they need time to practice in order to gain confidence on their own, which I have provided for in Lesson 1 with the practice problems and in Lessons 2 and 3 with the activity worksheets. My students also seem to benefit from having me monitor their work throughout practice time. By receiving my feedback on their work, they are able to identify and learn from their mistakes, and also feel a sense of success for work they have completed correctly.

5. For this learning segment, identify students' possible or common errors. How will you construct your assessments and lessons to identify and address possible misconceptions and errors?

A possible error I see being made by my students is as simple as forgetting which way to move the decimal when converting between percents and decimals (either 2 places to the left or right). To help address this procedural error, I wanted to be sure to teach another representation to highlight the reasoning behind this "shortcut" so that the students can still always find the answer, even if they forget the rule. So, in Lesson 1

notes I will make sure to model this process by using fractions as a “middle” step and having the students review how to write decimals as fractions and vice versa, so they can then convert to a decimal or percent from there. Also, to follow up with the “shortcut” of moving the decimal, I have provided practice problems; not only as reinforcement for the students, but for me to gain an assessment of how well they understand this procedure and identify any further misconceptions.

Another possible error I foresee is that the students will confuse the differences in writing percents as fractions versus writing decimals as fractions, because they are already very skilled at this. For example, writing 220% as a fraction is $\frac{220}{100}$, but writing .220 as a fraction is $\frac{220}{1000}$. To address and identify these errors, I have made sure that my lesson allows me to continually reinforce percents as “per hundred”, and I have also provided a visual representation with a 100-grid. The Exit Slip question #4 is also an assessment that will help identify this possible error.

Lastly, I believe my students (especially my English learners) may struggle with writing questions like “What number is 12% of 50?” as proportions. To help address this issue, I will model many examples in the notes, and I will also provide sentence frames with a VIP. The sentence frames, especially, will provide a scaffold for matching the correct numbers with the “is”, “of” and %. To assess my students understanding of this concept, I will allow guided practice time during the Percents on Planet Pluto W.S. and address errors by monitoring and reviewing their work.

6. Consider the language demands of the oral and written tasks in which you plan to have students engage as well as the various levels of English language proficiency related to classroom tasks as describes in the Context Commentary. (TPE 7)

a. Identify words and phrases (if appropriate) that you will emphasize in the learning segment. Why are these important for students to understand and use in completing classroom tasks in the learning segment? Which students?

As described in the Context Commentary, my students (including those with lower levels of English language proficiency) are usually able to define meanings of new words by piecing together words they are already familiar with. To build on this skill, I want to emphasize the word “percent” in this learning segment, and have the students build its definition by analyzing the word parts “per” and “cent” which they can already define as “divide” and “one hundred”. To build on my English Learners’ Spanish linguistic background, I want to point out that “cent” can be related to “cien/ciento” (meaning hundred) in their home language. “Percent” is important for my students to understand and use in this learning segment because it will lead them to convert to fractions or decimals and write proportions by using its definition to “divide by 100.”

Phrases that I will emphasize in the learning segment are questions like “What number is 12% of 50?” and other variations of this concept. This may be challenging for my students of all proficiency levels because they will need to relate words with mathematical symbols and ideas. These question sentences are important for my students to understand because they need to be able to set up proportions and equations based on these phrases, and even further, be able to use them to solve real world applications of percent questions.

b. What oral and/or written academic language (organizational, stylistic, and/or grammatical features) will you teach and/or reinforce?

A grammatical structure that I will teach relates to the percent question phrases described in part a, where students will repeatedly be identifying “is,” “of,” and “what” to identify the unknown, part, and whole. These pattern sentences will be reinforced orally and in writing, as students say and write questions and answers to percent problems throughout the notes, Percents on Planet Pluto W.S., and M&M Math W.S.

I will also help reinforce written academic language by having students write a letter to Mars, Inc. in Lesson 3. This is an important skill for all of my students to have because in their future they will need to use academic writing to justify their mathematical reasoning and solutions.

Oral academic language will be reinforced in the learning segment through my questioning, modeling in the notes and activities, and structured opportunities for students to speak with/to each other, such as in the Think-Pair-Share and students’ presentations of solutions to the Practice Problems.

c. Explain how specific features of the learning and assessment tasks in you plan, including your own use of language, support students in learning to understand and use these words, phrases (if appropriate), and academic language. How does this build on what your students are currently able to do and increase their abilities to follow and/or use different types of text and oral formats?

To support students’ use of the word “percent” and its meaning I will first engage the students in a discussion following the Vocabulary Self-Inventory in Lesson 1. This will build on all of my students’ prior knowledge of its meaning, and scaffold them into further depth by having them use the word in Lesson 2 and 3 with percent questions (both oral and written) used to write proportions and equations. The learning activity worksheets, used for students’ practice as well as assessment, will allow students to use academic language with the word “percent” and the percent question phrases through analyzing text in the Planet Pluto story where they will write and answer questions, and in writing a formal letter to Mars, Inc. where they will be required to use percents to support their arguments either in favor or opposition to the company’s color distribution of M&Ms. As described in the Context Commentary, my students with lower level of English language proficiency are easily able to participate in tasks with the help of a peer or teacher guidance. For this reason, I have structured the activities so that students can work with in pairs or small groups with students of different language skills. I have also provided sentence frames that identify grammatical structures (is, of, what) to help my English Learners structure percent question phrases on their own. This scaffold can be removed as students abilities increase and they are able to form percent phrases without needing a sentence frame to guide them.

The language that I use throughout the learning segment will also help support students’ use of academic language. As I model problems in the notes, I will incorporate text explanations of the process in the right column, as well as orally describe the process. My questioning throughout the learning segment can also help support academic language, especially for different proficiency levels. Depending on if I am addressing a student with strong academic language or someone who struggles more, I can tailor my questions to meet them where they can grow the most in their development. My feedback, after informally assessing their response, can also differentiate by each individual student, and I can prompt them in a direction that leads to further proficiency.

7. Explain how the collection of assessments from your plan allows you to evaluate your students' learning of specific student standards/objectives and provide feedback to students on their learning. (TPEs 2, 3)

Throughout the learning segment, my informal assessments, such as questioning and monitoring student work, will help me to evaluate students' learning. In each lesson, as the students take notes I will make sure to involve them in the discussion and check for understanding. I can also adapt my questioning for students with special needs depending on how and what I ask. Through these conversations and the following activities, I will be able to gain a sense of what students understand well, and what I still need to clarify. I will be able to give feedback to my students' responses and correct any misconceptions or errors. Based on their responses I will also be able to probe deeper and help them gain deeper understandings as needed. These types of assessments also access both productive and receptive modalities because the students are continually speaking and listening in discussion and writing and reading in the notes and activities.

In Lesson 1, the Math Sort will allow me to evaluate if students understand fraction and decimal equivalents for common percents (sort 1) and to see if they can interpret percents as part of 100 by using 100-grids (sort 2). The Exit Slip will allow me to assess my students' understanding of percents as part of a whole (#1) and the concept of decimal "hundredths" associated with percents (#3). This Exit Slip also allows my students to show depth of understanding because they have to combine the two concepts in #4 (converting between percents and fractions/decimals as well as reasoning that 220% is greater than 1 whole).

The Homework assignment for Lesson 1 is designed to allow students of all abilities to demonstrate understandings and skills for converting percents to decimals and fractions. To do this, I chose four sets of problems that all address the standards/objectives, but sorted them by varying difficulty so that students who are more advanced have the opportunity to be challenged and students who struggle can still show mastery.

In Lesson 2, the Percents on Planet Pluto W.S. will assess my students' ability to read and decipher text. After being receptive to my example, through listening and reading the paragraph and 1st problem, then the students will productively write and answer their own percent questions. The students will also calculate given percentages of quantities using proportions and they will use their reasoning to identify the in-depth meaning of their answers in relation to the story. As I walk around and help students, I can provide feedback on their learning.

In Lesson 3, the M&M Math W.S. will allow me to evaluate my students' learning of writing percent questions and the associated equations to calculate given percentages of quantities. The letter to Mars, Inc. will allow me to assess their deeper understanding of concepts and reasoning of the meaning of percents, as well as their proficiency with academic language when writing. Again, I can walk around and help students, thus providing feedback on their learning as needed.

For both Lessons 2 and 3, the homework assignments are also assessments of learning. When I take questions from the previous nights' HW I will be able to evaluate what the students understand, as well as provide feedback by going over one of the problems they struggled with.

8. Describe any teaching strategies you have planned for your students who have identified educational needs (e.g., English learners, GATE students, students with IEPs). Explain how these features of your learning and assessment tasks will provide students access to the curriculum and allow them to demonstrate their learning. (TPEs 9, 12)

To help my English Learners gain access to the curriculum, I have provided a visual representation of percent (100-grid) so that they can connect words with pictures when we define percent as a part of one hundred. To help them demonstrate their learning, I have also provided sentence frames and a corresponding VIP to help my ELs structure questions and answers for percent problems. Another strategy is to place my ELs in pairs and small groups where they have a more language proficient peer who can work with them and support their language development through conversation.

To address my variety of ability levels, especially my GATE students, the HW assignment for Lesson 1 is structured so that there are problems ranging from basic to challenging. However, to ensure that my more advanced students don't spend more time on the homework than someone who chooses an easy problem, I require less completed for the more difficult problems. Another way I will address my multiple ability levels is to provide my students the opportunity to work at their own pace during the activity worksheets. As my advanced students finish, I will encourage them to help their peers or start on homework in class. However, my struggling students still have plenty of time to finish in class, and at home if needed.

Lastly, to address my students' needs, my questioning can be informally tailored to each individual student. If a student understands very well, I can ask more challenging questions of them to help them grow in their learning, and for a struggling student or someone with limited English proficiency I can tailor my questions to lower the academic filter and ask less targeted questions or have them discuss with a partner before answering. However, I will be sure to still build on their knowledge and help them continue to grow and be challenged.

Instruction Task

Instruction Commentary

1. Other than what is stated in the lesson plan(s), what occurred immediately prior to and after the video clip(s) that is important to know in order to understand and interpret the interactions between and among you and your students? Please provide any other information needed to interpret the events and interactions in the video clip(s).

The first video clip begins just as we are beginning guided notes in Lesson 1. Just prior to this clip, the students had discussed the Vocabulary Self-Inventory, and as a class we had specifically discussed the word “percent.” I had asked for a show of hands for how many students thought they knew the word well and how many did not know the word at all, then I had asked the students to name places they had seen percents used in their lives. Answers included “at restaurants,” “at the store,” and “on commercials.” Then, we titled the notes and wrote down the word “percent” in preparation to define it. Following the first video clip, we continued with the guided notes to convert between percents and equivalent fractions and decimals.

The second video clip begins as the students are starting to work on the M&M Math W.S. in Lesson 3. Before they began, I introduced the data found on the M&M website about the color distribution of each bag of M&Ms. Next, I explained my expectations for the activity and how finding percent of a number would help them assess the validity of the information presented on the website. I informed the students that they were expected to do the math individually, but were allowed the opportunity to work with the peers at their table using whisper voices. Following the second video clip, students gradually completed the front of the W.S. and joined in groups of four to count the colored M&Ms in their bag.

2. Describe any routines or working structures of the class (e.g., group work roles, class discussion norms) that were operating in the learning task(s) seen on the video clip(s). If specific routines or working structures are new to the students, how did you prepare the students for them? (TPE 10)

In the first video clip, the working structures that are present are associated with guided notes. My students know that they are expected to copy down the notes in their interactive notebooks. However, they are also expected to participate in the discussion and ask questions as needed. If students have comments or questions, they are expected to raise their hands to speak, and no one is to interrupt someone else who is talking. If I need to regain the students’ attention or quiet them, I raise my hand. The students know that they are to refocus and stop talking; however, if I raise my hand and the students do not respond, I will count down from 5 to 0 and the students are to be attentive by 0.

In the second video clip, as the students work on their worksheets, they know that they are to attempt do every problem individually. However, they are allowed to discuss with their peers at their table using whisper voices. I encourage the students to ask each other for help, but I also make myself available for questions. If a student wants to ask

me a question, they are to raise their hand and wait patiently until I come to them. No one is to move from their seat during the activity unless they ask.

3. In the instruction seen in the clip(s), how did you further the students' knowledge and skills and engage them intellectually in understanding mathematical concepts, procedures, and reasoning? Provide examples of both general strategies to address the needs of all your students and strategies to address specific individual needs. (TPEs 1, 2, 4, 5, 7, 11)

In the first video clip, I delivered my instruction to build on the students' prior knowledge of concepts and procedures, as well as their own reasoning during the lesson. When defining the word "percent," I broke down the word into two parts so that the students would have the opportunity to piece together its meaning. To create a definition of "per," I asked the students where they had seen this word before so as to build on their prior knowledge. Such answers included "dollars per person," "miles per hour," and one student concluded that this was a rate. But to define "rate" I had the students reason what occurred when we procedurally wrote a rate as a fraction. They then concluded that it meant to divide, and thus one number was "divided by" the other number. To define "cent" I also used the students' prior knowledge to ask where they had seen the word before. Answers included "100 cents in a dollar" and "the root word of centimeter." To further engage them, I prompted them to related "cent" to the Spanish words "cien" and "ciento", thus, "cent" meant "one hundred."

Later on in the clip, to help the students understand the concept of what a percent is, I provided each student with a visual representation using a 100 grid. This strategy addresses my English Learners, as well as all of my students, by providing them with a visual to accompany the verbal definition. Then to help the students understand the procedure for writing a percent, we first represented the shaded and un-shaded boxes as a fraction, and then used the definition of percent to convert the fraction to a percent. Lastly, to further the students' conceptual learning of the relationship between the fraction and the 100-grid, I had them reason that the entire grid was the "whole" and the shaded boxes were the "part."

A couple times throughout this clip, specific individuals had questions that allowed me to use strategies to further their knowledge. For example, one student near the front gave the example of having 6 pigs out of 100 pigs. To guide improvement of the students' understanding of this concept, I built on her input by having another student elaborate, who concluded that this represented 6%. Later on in the clip, another student remarked that in elementary school he had seen percents out of 10. To address this idea, I had the students reason that if we divide 100 by 10, we end up with 10. Later on in the lesson (not seen in the clip) I was able to address this idea again by having the students write equivalent fractions by dividing the numerator and denominator by a common factor.

In the second video clip, the M&M activity gave my students a structured opportunity to develop their procedural understanding of finding percents of numbers as well as their conceptual understanding of its meaning in terms of M&M color distribution. To help my students practice using the equation, as opposed to the proportion, I provided an example on the white board that students could refer to during the activity. As I helped students, I could also refer to the white board work to demonstrate the procedures of

using multiplication to represent the word “of,” as well as to show how to multiply across when multiplying fractions.

As I walked around monitoring learning and helping students, I was able to work with many students individually. While helping them, I was able to further their understanding of procedures by addressing errors, such as explaining the difference between using proportions and equations, or asking questions like “What do you do next,” or “How do you write 14% as a fraction?” To further my students’ conceptual understanding, I asked probing questions that required them to reason what their solutions represented. For example, I asked one student “What does 7 represent?” and another “What does 12 represent?” so they could reason that a solution like 12 means that “12 is 24% of 50,” and thus, represents a part of the whole bag.

Another strategy I used to engage my students intellectually in their learning and further their knowledge was to recognize the skills they were doing correctly. For example, with two different students I pointed out how I liked that they wrote the percent number over 100. With another student I also checked his work and acknowledged that his procedure and arithmetic was done correctly. By recognizing these positive aspects of the students’ work, I am reinforcing skills that they should continually be doing to further their learning.

4. Given the language abilities of your students as described in Task 1. Context for Learning, provide examples of language supports seen in the clips that help your students understand the content and/or academic language central to the lesson. (TPEs 4, 7)

In the first video clip I had very specific language supports to help my students understand the content and academic language of the lesson. For example, to define the word “percent,” I had my students analyze each part of the word first. As described in detail in question 3, the students began by remembering that “per” was related to rates, and thus, they eventually could deduce that “per” meant “divided by.” For “cent,” the students related this word to the root word of centimeter and the Spanish words “cien” and “ciento.” By recognizing a root word, my students’ academic language is not only being strengthened in math, but also in other subject areas. Also, by having my students relate to Spanish, a majority of my students’ home language, I am making content accessible to students whose may comprehend more by associating words with their first language. In the first video clip I also provided a visual 100-grid to represent a percent and the relationship between a part and a whole.

In the second video clip I was able to support my students’ language development by allowing them to work with students of different language proficiencies. Although not obvious in the video, I have created a seating chart so that my students are paired with other peers who can support and help each other understand relevant content and academic language. Also not as obvious in the second video clip, the M&M Math worksheet requires the students to write question phrases for finding percent of a number. By allowing my students opportunities to practice writing academic question phrases, I am allowing them to grow in their understanding of the academic language necessary for solving these types of problems central to the lesson.

In both video clips, as a teacher I am continually modeling academic language through instruction and feedback. To start with, I was regularly having students use

academic language as they answered; for example, I would ask “What is another name for a rate?” and they would use the word “ratio.” Also, my vocabulary use of such words as “denominator,” “ratio,” “whole,” and my sentence structures such as “twenty-four percent of fifty” all provided models that my students can subconsciously mimic and eventually use on their own. By providing feedback to their responses, I am engaging in dialogue with them that supports their progress toward conversing academically about mathematics.

5. Describe the strategies you used to monitor student learning during the learning task show on the video clip(s). Cite one or two examples of what students said and/or did in the video clip(s) or in assessments related to the lesson(s) that indicated their progress toward accomplishing the lesson(s)’ learning objectives. (TPEs 2, 3)

As seen in the video clips, I monitored learning through discussion, questioning, walking around to check-in with students’ work, and by helping students. During guided notes in the first video clip, I was able to monitor learning by having the students discover information, rather than giving them information. This discussion allowed me to see where my students’ knowledge was, and where it was going. By asking probing questions, I was guiding the students from the idea of a percent, to the definition of percent, to a representation of percent, to recognizing the relationship between percents and fractions. As students answered my questions, I was able to build on their responses by following up with other students to elaborate. An example from the first video clip occurs when a student remarks about 6 pigs out of 100 pigs, as described in question 3. After this remark, I build on the example to further the understanding of all of my students. I ask a different student what percent of pigs this is, and he says 6%. This example indicates that my students understood the concept of “percent” and were able to procedurally compare it to a fraction with a denominator of 100, which were learning objectives of the lesson. In the second video clip, while the students were working on the M&M Math worksheet, I was able to monitor learning by checking-in and helping students. One example of monitoring learning occurs when I ask a student about his work. I ask him what represents the “part” and he says “the number of M&Ms” and then I ask what number is the “whole” and he says 50. Then, to make sure he really understands what the “whole” is, I ask why. He says because it is the “number of M&Ms in one bag.” This example indicates that this student understands the concept of “percent” as a part of a whole, and can also reason how percents are related to a real-life application of colors in a bag of M&Ms.