

MATHEMATICS SAMPLE

NOTES about this TPA Example

- 6th grade math class in a middle school. This is the lower grade-level end of what is accepted in the single subject assessments.
- The selected sections feature the Planning task and the Instruction task (which is based on the video clips submitted by the candidate). We will not view the video clips from this TPA.
- Everything here was submitted by the candidate, but it is excerpted from the overall TPA. The total TPA was 81 pages long and included lesson plans for multiple lessons, scanned pages of the textbook source materials, samples of student work with candidate feedback, and responses to all of the other TPA tasks.
- Questions from the task are embedded in the candidates' work and are in bold text. These questions are from prior version of the TPA, not the current prototypes.
- We do not have the rubric score rationale, but this example is meant to be an exemplary sample which would have scored a 3 or 4 on the four point scales.

Context for Learning Task

Survey: **Task1. Context for Learning Form (General Single Subject)**

General Single Subject Teaching Event Context Form

Please provide the requested context information for the class selected for this Teaching Event. This form is designed to be completed electronically. The blank space does not represent the space needed. Use as much space as you need. *

About the course you are teaching *

1. What is the name of the course you are documenting? *

Advanced Math

2. What is the length of the course? *

3. What is the class schedule (e.g., 50 minutes every day, 90 minutes every other day)? *
94 minutes every other day/(Mon-Thurs), Fridays every other week for 74 minutes.

About the students in your class *

4. How many students are in the class you are documenting? *

24

5. How many students in the class are: English learners, Redesignated English Learners, Proficient English speakers? *

English learners: 4

Redesignated English learners: 9

6. How many students have Individualized Education Plans (IEPs) or 504 plans? *

0

7. What is the grade-level composition of the class? *

All 6th graders

Context Commentary

1. Briefly describe the following:

a. Type of school/program in which you teach (e.g. middle/high school, themed school or program): I teach at a charter middle and high school that serves 6th through 12th graders. This school is located in an affluent area; however, all students come from nine different low socioeconomic neighborhoods throughout the county. The students who attend this school must fill out an application and be accepted based on the following requirements: have families whose income is below 185% of the poverty level, have parents that have never graduated from a four-year college in the United States, have parents that agree to serve a minimum of 10 hours for the school, are recommended by their past English and Math teachers, and show strong motivation and potential to go to college. The curriculum focus at this school has a great emphasis on college preparation and academic achievement for all students, and the students model this vision by wearing uniforms. The school structure includes Advisory classes (AVID-like classes) where students receive support and coaching from a long-term teacher, ideally from 6th and continuing through 12th grade. There are also many tutors that volunteer from the local university. For struggling students, after school tutoring and Saturday school are provided. There are also weekly professional development meetings for teachers and staff.

b. Kind of class you are teaching (e.g., eighth grade Algebra-first year of a two-year sequence, Honors Geometry) and organization of subject in school (e.g., departmentalized, interdisciplinary teams): I teach a 6th grade year-long math class, where students are just being introduced to pre-Algebra. The math department meets weekly, and the 6th grade department meets monthly to discuss lesson planning; however, lesson plans are created and taught by each individual teacher.

c. Degree of ability grouping or tracking, if any: All 6th grade students receive a math diagnostic test at the beginning of the year, and are only moved to 7th grade pre-Algebra if their score is very high. All other 6th grade students are taking 6th grade math. Students with low CST scores in Math will be placed in a Math enrichment class for extra support, while the rest of the 6th graders take a wheel of electives. In high-school classes there are AP courses offered to all students and a CAHSEE support class for students who are struggling.

2. Describe your class with respect to the features listed below. Focus on key factors that influence your planning and teaching of this learning segment. Be sure to describe what your students can do as well as what they are still learning to do.

a. Academic development

Consider students' prior knowledge, key skills, developmental levels, and other special educational needs. (TPE 8): In my class, I have 9 designated GATE students; however, I find that within my group of GATE students their skill

levels are varied, and some of them still struggle. Also, some of my non-GATE students show very high achievement. Most of my students came to my class with a great deal of prior knowledge. Many are very adept at operations with positive integers and decimals. In the first semester, they have mastered the skills to use equivalent fractions, convert fractions to decimals, and use proportions. However, I still find that a majority of my students are still struggling with long division of decimals, operations with fractions, and negative integers. My students are still learning to use variables to represent unknown quantities and to solve one-step equations.

Developmentally, my students' levels are varied. I have a group of students who seem to really understand the concepts behind the math and can think critically and reason through difficult problems (such as applying the concept of equivalent fractions to solve proportions). On the other hand, I have a group of struggling students who can barely even master the procedures needed to solve problems, much less, understand the reasons behind the mathematical skills. (i.e. they are just now learning the procedure for dividing decimals). The majority of my students are developmentally able to master the procedures and are on the brink of understanding the related concepts (for example, they are able to use their skills to add fractions, and are just beginning to understand the logical importance of a common denominator).

b. Language development:

Consider aspects of language proficiency in relation to the oral and written English required to participate in classroom learning and assessment tasks. Describe the range in vocabulary and levels of complexity of language use within your entire class. When describing the proficiency of your English learners, describe what your English learners can and cannot yet do in relation to the language demands of tasks in the learning segment. (TPEs 7, 8): When using mathematical language, most of my students use a mix of academic and everyday language to speak and write about what they are learning. For example, my students may write or say “you convert a fraction into a decimal by putting the top number in the house” (i.e. the numerator is divided by the denominator when using long division). Even though my students do not always correctly use academic vocabulary, I find that this does not indicate a lack of proficiency or understanding. Overall, it seems that my students have enough language proficiency in order to participate in the learning and assessment tasks. Considering vocabulary complexity, I find that most words the students encounter are terms they are familiar with, or at least recognize. Only rarely is there a word that is completely new and unheard of. If this happens, usually the new vocabulary can be related to something familiar and, with guidance, the students can piece together a definition or meaning. (For example, the new word “ratio” is understood by familiar words such as “fraction” or “division”).

In my class, there are 4 students classified as English learners, 2 Advanced and 2 Early Advanced. I also have another 11 Redesignated and Fluent English Proficient students, 4 of which are GATE. In relation to the

language demands, my English learners are generally very capable in the tasks. Occasionally, some of my English learners may struggle with comprehending directions or understanding definitions, but with the help of a peer, they are able to participate in the tasks. Most of my English learners are very comfortable asking questions and getting help, which makes it much easier to address their language struggles. The most common difficulty I see among my English learners is the ability to express their thoughts orally and through writing. Often times I see my English learners doing correct math, but they have trouble articulating their thought process. However, I find that with teacher guidance and peer assistance, these students are eventually able to express themselves effectively.

c. Mathematical dispositions:

Consider student attitudes, curiosity, flexibility, and persistence in mathematics: There is a wide range of student attitudes towards math evident throughout my class. On the one hand, I have a group of students who is incredibly persistent and will take the time to work through or retry a problem until they have a solution. However, the majority of my class has a more limited sense of persistence, and stops when problems begin to look to challenging. When these situations occur, sometimes I can use prompting or guidance to motivate the students to try something new or rethink their approach. I find that positive acknowledgement of their work seems to spur more effort. Only a small few of my students have very poor attitudes toward math. One student in particular rarely turns in homework or shows effort in class; however, after speaking with her parents and the counselor I have found that she is identified in GATE, but has just never liked math. Despite this challenge to motivate, I still work to involve the student in the activities with the hope of influencing, and possibly changing, her attitude.

Throughout the year I have found that my students tend to have much better attitudes about math and are much more curious when the concepts involve their interests and real lives. I am excited to begin this learning segment on percents because the students will be familiar with sales, tax, and tips; and therefore, hopefully more curious and engaged in the learning.

d. Social development:

Consider factors such as the students' ability and experience in expressing themselves in constructive ways, negotiating and solving problems, and getting along with others. (TPE 8): Throughout the year, my 6th graders social development has gradually been improving. These students are new to middle school and they still sometimes exhibit very child-like social habits, such as not taking turns when talking and only associating with peers of the same gender. However, with practice, it seems that my students are maturing in their interactions with each other. As a whole class, my students seem to be successful at sharing with the group and taking turns to volunteer. However, in groups and pairs, I still need to work with my students to help them develop the social skills to share work equally, work collaboratively, and share ideas.

Behaviorally, most of my students seem to get along and enjoy working together; however, more so for social reasons than academic. I am sure that with more practice my students' social development will continue to improve.

e. Family and community context:

Consider key factors such as cultural context, knowledge acquired outside of school, socio-economic background, access to technology, and home/community resources:

The ethnic makeup of my classroom has 18 Hispanics, 5 African Americans, and 1 Asian. Language is a large part of my students' culture; however, it also is a barrier to the families who attempt to be actively involved in their students' education. Despite the language barrier, I have found that many families are incredibly supportive and cooperative, and they too want their children to become college graduates. At this school, we are working with families to assist their students by regularly checking completed homework, and helping their students prepare for tests; which is a great way for parents to be involved without having the educational knowledge to help. I have found that socioeconomic status is most influential on my students' lives. Many students live in homes that are crowded and may not have a quiet place to study. Many parents work more than one job and have less time to spend at home, while other parents have no jobs and cannot provide necessities for their family. It is not evident that my students are acquiring significant knowledge outside of school; however, many of my students are involved in extra-curricular sports and church groups. At home, the majority of my students have access to a computer; however, if this is not the case, there is always enough time given at school to complete computer projects. Each classroom at this school has 15 computers for students to use. There are not many outside resources for my students other than local libraries or community centers; however, many of my students have older siblings that are great resources for school success and support.

3. Describe any district, school, or cooperating teacher requirements or expectations that might impact you planning or delivery of instruction, such as required curricula, pacing, use of specific instructional strategies, or standardized tests:

There are not many requirements or expectations of my instruction that must be met and teachers are free to plan their own lessons. However, we are required to follow the McDougal Littell Math Course 1 California curriculum, and we are encouraged to finish teaching the California standards before standardized testing occurs in May. Also, at the end of each semester we must give a department, grade-level, cumulative final during finals week. Other minor requirements include posting the objective, homework, and agenda daily.

Planning Task

Lesson 1

Content Standard: Grade 5, Number Sense 1.2: Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value.

Learning Objectives:

Content: Students will represent percents as parts of a hundred by writing fractions with a denominator of 100 and using 100-grids to shade in parts of 100. Students will convert between percents and fractions by writing percents as fractions with denominators of 100 and finding equivalent fractions. Students will convert between percents and decimals by first writing fractions and then dividing to find the decimal equivalent. Students will then develop a method of “moving the decimal” to convert directly between percents and decimals.

Language: Students will familiarize themselves with prior and new vocabulary and be able to specifically define and understand the meaning of the word “percent.” Spanish speaking students will connect the root word of percent, “cent,” with their home language words for one-hundred, “cien/ciento.” Students will learn to form sentences and use the words “part” and “whole” correctly when discussing percents. Students will also form connections between the word “hundredths” used for decimals and “divided by 100” used for fractions.

Formal and Informal Assessments:

- Vocabulary Self-Inventory
- student writing on back of Vocabulary Self-Inventory
- listening to student definitions of words from Vocabulary Self-Inventory
- students’ hands raised for knowledge of the work “percent”
- thumbs up, thumbs in the middle, or thumbs down for understanding
- student questions and discussions during note-taking
- student volunteers’ work on board after practice problems
- Math Sort (completed with pieces glued in each category)
- listening to students’ discussions during Math Sort
- student volunteering during teacher edition of Math Sort
- Exit Slip

Instructional Strategies and Learning Tasks to Support Student Learning:

Time	Teacher Actions	Student Actions
5 min.	Greet students -remind students to copy down HW	Copy down HW in planners
5 min.	Pass out Vocabulary Self-Inventory -explain +, ?, 0	Work individually to complete Vocabulary Self-Inventory, sit quietly when finished

		(language objective addressed, informal assessment of prior knowledge)
5 min.	<p>Give directions for students to discuss the Vocabulary Self-Inventory with their partner (Think-Pair-Share strategy addresses English Learners as well as ALL of my students by lowering the affective filter and allowing each person to speak and share their ideas)</p> <ul style="list-style-type: none"> -walk around and listen to conversations students are having (informal assessment) 	<p>On the back of their paper, write down two words they both put a + for and two words they both put a 0 for. (language objective addressed, informal assessment of prior knowledge)</p>
5 min.	<p>Discuss results of Vocabulary Self-Inventory with the class, call on volunteers.</p> <ul style="list-style-type: none"> -make clarifications and help refine student definitions as needed -ask for hands raised of who put a + on the word “percent” and ask for student definitions (informal assessment) 	<p>Volunteer in discussion, share definitions of words they put a + for and make conjectures about definitions of words they put a 0 for.</p>
5 min.	<ul style="list-style-type: none"> -Collect Vocabulary Self-Inventory -Pass out 100 grids and glue sticks 	<ul style="list-style-type: none"> -Pass-in Vocabulary Self-Inventory -Glue 100 grids in their notebooks
30 min.	<p>Give Guided notes titled: “Chapter 6: Percents.” (content objectives addressed throughout notes)</p> <p>Remember to highlight:</p> <ul style="list-style-type: none"> -break down “per” and “cent” (language objective addressed) - discuss ratio/rate for “per” -“cent” sounds like “cien/ciento” in Spanish (addresses English Learners) <p>(language objective addressed)</p> <ul style="list-style-type: none"> -part/whole relationship (pizza ex.) (language objective addressed) 	<p>Take notes in interactive notebook</p> <ul style="list-style-type: none"> -volunteer for questions and discussions (informal assessment)

	<p>-proportion/equivalent fractions -“hundredths” for decimals (language objective addressed) Regularly ask for thumbs up, thumbs in the middle, or thumbs down for understanding. (informal assessment, allows English Learners, as well as ALL of my students to participate in a linguistically simple and nonthreatening manner)</p>	
10 min.	<p>Give practice problems -Help students as needed Pick volunteers to do problems on board</p>	<p>Do practice problems in notebook. (content objective addressed) Volunteer to do problems on board. (informal assessment)</p>
20 min.	<p>Pass out Math Sort papers to each pair Pass out 1st envelope to each pair 1st: Explain to sort pieces by type: percents, decimals, fractions, and proportions (content objective addressed) Pass out 2nd envelope to each pair 2nd: Explain to sort pieces by value using 100 grids (content objective addressed) -walk around and listen to conversations students are having, ask guiding questions if needed (informal assessment) When students finish, do teacher edition on the board. Have students volunteer their answers and explain their reasoning. (informal assessment)</p>	<p>1st: Sort pieces by type and glue down each piece into categories 2nd: Sort pieces by value and glue down each piece into categories (informal assessment, addresses English Learners as well as ALL of my students by giving them the opportunity to discuss and learn in pairs, thus, lowering the affective filter)</p> <p>Help teacher complete the two sorts on the board. Use complete sentences and vocabulary (i.e. percent sign, decimal point, numerator, denominator, ratios, part, whole). (language objective addressed)</p>
5 min.	<p>-Collect Math Sorts -Pass out Exit Slip (informal assessment, addresses a variety of ability)</p>	<p>-Pass-in completed Math Sorts -Complete Exit Slip individually and turn-in when finished (content objective addressed)</p>

	levels--some simple questions and some challenging questions) -instruct students to work individually, they can use their notes to help them	
5 min.	Pass out HW sheet and explain point system (informal assessment, content objective addressed, addresses a variety of ability levels--high achievers can do a few hard problems and struggling students can practice many easy/medium problems)	Put HW sheet in binders
5 min.	Collect glue sticks and Exit Slips -dismiss students when ready	Turn-in papers and clean up -sit in seats when ready

Resources and Materials:

- Vocabulary Self-Inventory papers (24 copies)
- 100 grids (24 copies)
- glue sticks
- Guided Notes
- Math Sort category papers (12 copies)
- 1st sort envelopes with pieces (12)
- 2nd sort envelopes with pieces (12)
- teacher edition sort for board
- Exit Slip papers (24 copies)
- Homework sheets (24 copies)