Instructional Design

ETAD 873

Fractions, Decimal and Percent Unit

Assignment 3

Submitted for partial fulfilment of ETAD 873 requirements

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Part A: General Strategies

Learning Problem:

In the unit of Fractions, Decimals and Percent students have experienced difficulty converting from fraction, to decimals and percent and understanding how to solve problems involving them. While teachers are provided with a Math Makes Sense textbook and a teacher resource to instruct this unit, difficulties have been found in the students understanding of the language the textbook uses and the lack of sufficient practice in order to master the concept. Students are frustrated with a text that they have a hard time understanding. Teachers are challenged with the textbook's focus on word problems and lack of practice questions in one specific math skill in order to gain mastery. A technology infused, instructional design approach that allows rich media instruction and sufficient practice in changing fractions to decimal and percent values will allow students to master this skill.

Instructional Goal:

Students will be able to change fractions to decimal and percent equivalents in word problems.

It is expected that students will have acquired the basic skills to log on to their computer account and that students are able to access the lesson resources / website; the following objectives are as follows:

Objectives #1: Given access to either pencil and paper questions or computer based questions, Grade 7 students can divide fractions to determine decimals with 80% accuracy.

The Audience	Grade 7 students
Terminal Behavior	Will be able to change fractions to decimals by logging in to their school account and access practice lessons and by paper and pencil.
Conditions	Given a Chrome book or iPad, internet access, website address and paper/pencil.
Performance Degree, Standard or Criterion	The performance degrees are shown in the rubric below. Minimum Standard: Students will be able to divide fractions to get decimals using both computer generated practice questions and paper and pencil questions 60% of the time.

Objective #2: Given access to either pencil and paper questions or computer based questions, Grade 7 students can change a decimal to a percent by multiplying by 100 with 80% accuracy.

The Audience	Grade 7 students
Terminal Behavior	Will be able to change a decimal to percent by logging in to their school account and access practice lessons and by paper and pencil.
Conditions	Given a Chrome book or iPad, internet access and a website, paper and pencil.
Performance Degree, Standard or Criterion	The performance degrees are shown in the rubric below. Minimum Standard: Learners consistently able to change a decimal to a percent correctly 60% of the time.

Objective #3: Given access to either pencil and paper questions or computer based questions, Grade 7 students can read and solve word problems requiring them to change a fraction to a percent 80% of the time.

The Audience	Grade 7 students
Terminal Behavior	Will be able to read and solve word problems requiring them to change a fraction to a percent in both paper and pencil and on computer generated questions.
Conditions	Given a Chrome book or iPad, internet access and a website, paper and pencil.
Performance Degree, Standard or Criterion	The performance degrees are shown in the rubric below. Minimum Standard: Students can read, interpret values and solve fractions to percent word problems 60% of the time.

Supplantive Strategy:

Due largely to the learners being between the ages of 11 and 13 and considered novice, the instructional strategy will be supplantive. Accordingly, to Smith and Ragan (2005):

> *Supplantive instruction tends to conserve novice learner's capacity for acquiring skills and knowledge related to the learning task by limiting the amount of responsibility they must carry for structuring the learning situation. It may lead to more focused and predictable learning outcomes. For less knowledgeable learners, it may be more efficient than generative learning strategies. (p.142)*

As student's gain a better understanding of changing fractions to percent and grow in confidence in solving word problems, a generative instructional strategy could be considered (i.e. students generate their own word problems and share them with classmates to solve). Smith and Ragan mentioned that "Generative strategies require greater mental effort and consequently lead to greater depth of processing that results in better learning" (p. 143).

Supplantive Strategy Considerations	Perspective
Learner	
Prior knowledge	Grade 7 students have previously learned how: • to log in their school account • to access the internet browser • to write a web address in the address toolbar • to utilize a calculator to multiply or divide.
Motivation	• Grade 7 students usually show high motivation in being able to interact with rich media and produce a final product using computers and the internet. • A supplantive strategy allows sufficient supports and guidance that will ensure a successful outcome for the students. This will ensure that a high level of motivation is maintained and/or possibly increased over the course of the lesson.
Task	
Simple & Well defined	• Grade 7 students will follow concise and well organized step-by-step procedures to answer a math problem that asks them to change a fraction into a percent.

Context	
Time	- This unit is requires one month to complete or twenty lessons. - It is important to manage time wisely and to be effective with the time being allowed to use the Chromebooks, laptops and in the computer lab. - In order to develop a good proportion of technology use and textbook work, ten periods will be given to complete the assignment. - An extra class period can be scheduled to assist students having difficulty completing the unit.

Universal Goal	- Students will achieve proficiency in completing the curriculum outcome: **Outcome: N7.4** **Expand and demonstrate an understanding of percent to include fractional percent's between 1% and 100%. [C, PS, R]** a. Create a representation (concrete, pictorial, physical or oral) of a fractional percent between 1% and 100%.
	   b. Express a percent as a decimal or fraction.
	   c. Solve a problem that involves finding a percent. - Students will understand how they can apply finding the percent in a variety of real-life contexts.

General Strategies

Organizational Strategies:	Perspective
Sequence (Lesson) This unit is broken up into 20 lessons and around 4 weeks to complete. The first week (5 classes) will introduce the unit and have students master changing a fraction to a decimal. The second week students will learn how to change a decimal to a percent. The third week will have them start solving word problems involving finding percent's. The fourth week will be teaching them how to go from a percent back to a decimal fraction and final unit tests. Utilizing this format will allow lots of time for practice and assistance.	In Smith and Ragan's textbook they elaborate on Gagne et al. (2005) 9 Events of Learning as followed: 1.Gaining attention **Intro** 2. Informing the Learner of the objectives 3. Stimulate recall of prerequisite learned and capabilities 4. Presenting the stimulus material **Body** 5. Provide learning guidance 6. Eliciting performance 7. Provide feedback about performance correctness 8. Assessing the performance **Conclusion** 9. Enhancing retention and transfer As outlined on p.129 in Instructional Design: Third Edition by Smith & Ragan.
Content	• This unit will be taught in a segmenting approach. A segmenting approach "allow(s) time between successive bit size segments… pausing at important times to allow the learners to "absorb" information before moving on." (p.144)

	• Instructions will be given step-by-step and chunked to ensure that students have acquired the necessarily skills (i.e. changing a fraction to a decimal) before moving on to the next weeks lesson. The goal will be for them be able to change a fraction to a percent with no assistance and be able to solve real-life word problems on percent's. • These strategies will reduce the amount of Cognitive Load experienced. The main point of cognitive load theory is "how constraints on our working memory help determine what kinds of instruction are effective." (Smith & Ragan, p. 144)
Delivery Strategies:	**Perspective**
Instructional Medium	These lessons will be delivered primarily in a class with a classroom teacher, but will also utilize the following: • Verbal instruction • A Smartboard. • With computer simulations solving questions. • Video instruction. • With paper and pencil to solve questions changing fraction to a decimal. • With paper and pencil to solve questions changing a decimal to a percent. • With paper and pencil to solve word problems. • With a Chromebook, laptop or iPad can access the internet lesson and complete the problem questions online (i.e. Google Classroom with link to a Google doc).

Learning Group	• The learning group will be Grade 7 students. • The number of students will vary depending of the school's class size (approximately 24). • The instruction will be given as a group. Individual or adaptation of instructions can be given if necessary. Educational assistance is available for students with special learning needs on a weekly basis.
Management strategies:	**Perspective**
Scheduling	• Lessons will be delivered during Math class around November and December. They will also be scheduled according to the availability of the computer lab and laptop / Chromebook cart's availability. Students will be accessing computers at that time. • A sign-in sheet is available for teachers to book the lab or use the portable cart and can be booked up to a month in advance. • 20 classes will be scheduled with 10 of those classes allowing access to the laptops, iPads and Chromebooks so students can complete the online activities.
Resources	• Students will have access to a computer in the computer lab or an iPad or Chromebook from the portable cart. • Students will be required to log into their Google Drive accounts and find their Google classroom. On google classroom the lesson and assignment for the day will be posted. • Handouts will be available in the case that there is insufficient laptops or iPads or students are

	having issues with access. These will be kept in a handout bin in the classroom.

Part B: Specific Strategies

Instructional Strategies

The two types of learning that I will be using in this prototype are Procedural Learning and Problem Solving Learning. Procedural Learning will teach students how to perform changing a fraction to a percent. Smith and Ragan describe procedural learning as also a strictly defined procedure. "Another term for a strictly defined procedure is an algorithm… mathematic operations are procedures that are algorithmic." (Smith & Ragan p. 189). In mathematics they later state that "learners will be taught a procedure for solving such problems quickly: First determine what values are known, and then determine which equation will solve for the unknown." (p. 189). The steps in a procedural learning situation are as followed:

1. Recognize a situation in which the procedure is applicable.
2. Recall the procedure.
3. Apply the steps in the procedure.
4. If required, make decisions at decision points (used in complex procedures i.e. CPR)
5. If required choose correct branches (in complex procedures)
6. Complete steps in required branches
7. Ascertain that the procedure has been applied appropriately.

(Smith & Ragan p. 190)

As the students build confidence and further their understanding they will gradually move towards a Problem Solving Learning Strategy. According to Jonassen,

In the most general sense, a problem is an unknown that results from any situation in which a person seeks to fulfill a need or accomplish a goal… The problem-solving process depends upon the problem solver's understanding and representation of the type problem, including an understanding of the problem state and goal state. (p.66)

Students will be able to identify what the problem is and understand what the goal state, or in other words what is the desired solution, and understand the process to get there.

Specific Procedural and Problem Solving Instructional Strategies that will be utilized.

In order to teach these students the right procedures to solve a fraction to decimal problem and help them to acquire a problem solving strategy to find the solution to word problems I will utilize Gagne's nine events of Instruction to guide my lesson plan development. Robert Gagné proposed a series of events which follow a systematic instructional design process that share the behaviorist approach to learning, with a focus on the outcomes or behaviors of instruction or training. (Gagne (2), p. 1). Below are the nine steps with specific reference to changing a fraction to a decimal in grade 7 math.

Procedural and Problem Solving Learning with
Gagne's 9 Events of learning

1. **Gaining attention - (Teacher led oral and visual demonstration)**
   - The lesson will start with the teacher showing a graphic with two students debating the sores on a test, may include a graphic of a test. Beside the graphic will be the following question:

     Mike and Sarah are both taking grade 7 math with different teachers. They both got back a test on integers they wrote this week. Mike got 34/50 and Sarah got 32/45. Mike and Sarah are arguing over who got the better percentage mark. Who do you think did?

   - The teacher will hand out a KWL chart to all students. For the first part of this strategy, students will write down on the paper what they *know* in the "K" column about solving this question.

   - The teacher will ask students what are the important values in this question. He/she will then ask what the fractions in this question are. Using a brainstorming strategy, with answers being written on the board, the teacher will guide students with completing the knowing part of the KWL chart.

- Next on their KWL chart students will write down on the "W" column what they *want* to know about finding percent's. The teachers will record their brainstorming responses on the Smartboard or chalkboard.

    See Appendix A

2. **Informing the Learners of Objectives – (Visual PowerPoint)**

    On a PowerPoint slide the teacher will display the learning outcome for this unit.

- **Outcome: N7.4**
    - **Expand and demonstrate an understanding of percent to include fractional percent's between 1% and 100%. [C, PS, R]**

    d. Create a representation (concrete, pictorial, physical or oral) of a fractional percent between 1% and 100%.

    e. Express a percent as a decimal or fraction.

    f. Solve a problem that involves finding a percent.

    See Appendix B

3. **Stimulate recall of prerequisite learned and capabilities – (advanced organizer by chunking the information)**

    - Students will recall the parts of a fraction (numerator, divisor line, and denominator). The teacher will review that the divisor line is another representation on the division symbol. Therefor we can write 32/45 as 32 ÷ 45.

    See Appendix B

4. **Present the stimulus material:**

    At the beginning, students will learn the terminology and the differences between them. They will also learn how to answer a question using the correct steps. (Procedural Learning)

    Step #1: *Teach Glossary of new terminologies and the differences between them:*

- Fraction
- Decimal
- Percent

Step #2: *Teach how to find the decimal from a fraction:*
- Example question:
  Mike had 34/50. We need to find the decimal before we can find the percent. To find the decimal we divide the numerator by the denominator.

- Example answer should contain:
  34/ 50 = 34 ÷ 50
  = 0.68

Step #3 : Teach how to change a decimal to a percent.
  To find a percent from a decimal we multiply the decimal by 100%.

- Example:
  0.68 x 100% = 68 %

Step #4: Write the answer to the word problem as a sentence.

- Mike got 68% on his integer Math test.

5. **Provide learning guidance**
   - This will be a two part process. First students will use paper and pencil to solve the percentage that Sarah got. Once they get the right answer and show their work correctly they will grab a Chromebook or iPad to log onto their Google classroom and complete the review and practice questions online. Students will click on the link on the google classroom site that will take them to the Kahn Academy (https://www.khanacademy.org/math/cc-seventh-grade-math/cc-7th-fractions-decimals) where they will review and practice changing fractions to decimals. A walk through of how to access the link in Google Classroom and find the correct learning lesson in Kahn Academy will be provided on the Smartboard.
   - One on one, the teacher can make some adaptations if a student is struggling.

6. **Eliciting performance**

   Paper and pencil worksheets will then be provided to let them practice solving a fraction to percent problem. https://www.superteacherworksheets.com/percents/converting-fractions-decimals-percents_EASIE.pdf?up=1466611200

   Students can work in pairs to work through solving their worksheets and help each other out.

7. **Provide feedback about the performance**

   As students are practicing changing fractions to percent, the teacher will give students, individually or as a group, feedback on how they are doing. The teacher will ask questions and guide them through the process of finding the percent of a fraction. If some adaptations or adjustments need to be done, this time will be appropriate to do the changes. Teacher will also have their own iPad logged into Student Achieve or a mark book on them to do a formative assessment of each student.

8. **Assessing performance**

   Once the students have completed the online Kahn academy questions and the printed worksheet and they feel confident in their understanding of changing a fraction to a percent they will log onto their Google Classroom and complete the Math – Fractions to Percent Quiz that I have designed using Google Forms.

   Students will also hand in an assignment with four selected textbook questions from Math Makes Sense 7 that they will complete independently next day or for homework.

   Third and finally, at a later date, students will complete the school divisions Math assessment on this outcome.

   The three evidences of understanding will be marked on a 4-point rubric scale and each will be entered into our school divisions grading program known as Student Achieve. Their most recent achievement will be their final mark but professional judgement can be utilized to determine overall average if most recent mark is lower than previous tests and assignments.

   See Appendix D

8. Enhancing retention and transfer

a) Back in the classroom leaners will paraphrase and review:

- The terminology of fractions, decimals and percent.
- The procedure for finding a percent from a fraction.

b) Students will then be asked where else besides tests do they encounter fractions and may need to know how to determine the percent.

c) Class discussion: Students will then Think, Pair and Share their ideas with the class.

d) Teacher will record student ideas on the Smartboard.

9. Conclusion

a) To conclude the final idea, we would return to the KWL chart. Students would write down what they have learned about finding a percent from a fraction.

b) To also conclude I will have the students try an exit question similar to the one below.

Emily was looking over her last season's hockey stats. She noticed she scored 23 times in 30 games. What percentage of the games played did she score?

Part C: Visual Design Strategies

Functional Characteristics (What is the purpose?)	Formal Characteristics (How does it look? and Where does it appear?)
Motivational - The motivational function for the visual design would be to: • Establish relevance to the task • Elicit interest • Promote a positive experience Using technology can be difficult to understand if the visual is not motivating and easy to follow.	**Colour Palette** • PowerPoint slides and Smartboard slides and Google Classroom will have a white background and where applicable will have with a dark blue writing. • Blue is a cool calming color that shows creativity and intelligence. The use of dark blue will allow for high contrast **Tone**

	• Text and visuals will be very simple and kept to a minimum not to overwhelmed students. • This will entail no more than 4 bullet points per page or 2 – 3 steps in solving an equation. • Only one visual per slide. (Simonson et al, 2015. P 210)
Cognitive – The cognitive function will help learners to organize and to store necessary information for their task.	**Chunking** • Individual steps are shown on each PowerPoint or Smartboard slides to help students chunk the steps together. • Students will also write out the steps into their math journals for future reference.
Instructional - The instructional function will help learner to have a clear understanding of steps required to solve the math problem by demonstrating them in a precise and concise procedure.	**Visual** • The PowerPoint or Smartboard slides will clearly show the steps involved to solve the question. The instructor will also do examples with the whole class to help students see how to solve the problem completely, step by step. • Slides will follow the principle of Aligning: placing printed words near corresponding parts of graphics (in this case the math equations) to reduce the need for visual scanning. (Smith and Ragan, p. 144)

	Visual Characteristics or Principles Employed	References
Layout	**Alignment** • All information on PowerPoint slides, Smartboard Files and Google classroom will be centered on the slide with equal white space on either side in order to achieve informal balance. • The writing in the PowerPoint and the Smartboard files will be left-justified as spacing is more consistent and is more legible and natural for the reader.	(Simonson, p. 210)

Icons	• If icons are used (i.e. text buttons, symbols) They will have a slightly shaded background colour (i.e. light grey) with a bolded word in a minimum size of 28 font or simple graphic picture that clearly stands out. • Limit the number of different icons. • Make the icon stand out from its background, • Consider three dimensional icons; they are eye-catching but also can be distracting, • Ensure that a single selected icon is clearly visible when surrounded by unselected icons. • Make each icon distinctive from every other icon. • Ensure the harmoniousness of each icon as a member of a family of icons. • Where needed, borders will be used to achieve unity. • Lines will also be used to unify concepts.	(Simonson, p. 216) (Schwier, 2017)
Graphics/ Cartoons/ Photographs	**Graphics:** • An effective graphic should provide visual information related to the topic being learned. The elements of design combined according to the principles of design can assist the distance educator in the development of effective ISG's and handouts that visually explain ideas and that facilitate understanding. • When bandwidth is a problem, gratuitous visuals would seem to be unnecessary in page design. • Graphics that are being used will be Screenshots of step-by-step of solving the problem and of logging onto the computers to access the assignments and notes. • Graphics will be kept simple so not to overload students. • Pictorial graphics are important for learners if the content is new.	(Simonson, p. 215) (Simonson, p. 210 - 215)

	Photographs and Cartoons	(Schwier, 2017)
	• All photographs and Cartoons will be simple, free of background distractions and effectively support instruction. I.e. in the case of the opening problem where two students are debating who has the right answer a simple picture of two students talking about a test will suffice.	
	Charts	
	• The KWL chart headline areas will have a slightly darker background shade where the main idea is boxed in.	
	• This will allow learners to visually focus on important key points of the chart.	
	•	
Text	**PowerPoint & Smartboard**	
	• A Sans Serif font will be selected for all writing.	
	• Bold fonts with thick stems display the best.	(Simonson, p. 210)
	• The font will be Arial at a maximum size of 48 for the Headings, 36 for the Titles, and minimum size of 28 for the text.	
	• This font and size easily readable from a distance.	
	• One font will be utilized throughout the text.	
	• Italics and fancy typefaces will be avoided.	
	• Text is dark blue to promote contrast with the white background.	
	• Spacing between sentences will be double-line to facilitate reading.	
Animation	• Animation is almost always annoying. Therefor it should be used sparingly.	(Jakob Nielsen, found in Schwier, 2017)
	• If animations are used they will not be distracting to the student but will assist with learning.	
	• An animation may be used as a visual analogy.	
	• Appropriate uses for animation include: Showing continuity in transitions - proving the Pythagorean theorem by animating the	(Simonson, p. 220)

	movement of various squares and triangles as they move around to demonstrate that two areas are the same size". • An example of an animation that may be used is a GIF that shows the steps in solving a question. • Animations will also be utilized to grab student's attention at the board (i.e. a motivational set). • Simple, fun cartoon animations can be at www.animationfactory.com • Do not use animations that continue endlessly - they irritate users.	(Schwier, 2017)
Sound	• If audio is incorporated in your site, make sure it is the highest quality you can produce. • Clear articulation of instructions is crucial. • An English voice with a slightly British accent may be preferable. • Hiring a professional speaker for audio recordings would be ideal. • Given the diversity of students in class, opportunities for instructions in other languages should be provided if needed (i.e. Google Translate) • Audio can be used to give help or directions without obscuring the screen.	(Schwier, 2017)
Video	• Using video can be tricky due to restrictions on bandwidth and some students having slow connections (remember dial-up?) or in rural locations or they are utilizing obsolete equipment. • Loading time for pages must be kept to a few milliseconds in order to keep students attention and focus. • Total page size should be kept small, graphics and video should be kept to a minimum.	(Schwier, 2017)

| | • Students should have the choice of watching the video on a page. They should not play automatically.
• Videos will only be utilized when they truly add to the user's understanding.
• For the purpose of this design project a maximum of three videos can be incorporated.
• Those videos will show step-by-step how to solve changing a fraction to a percent.
• One video could show how to change a fraction to a decimal (i.e. like the Kahn Academy video).
• A second will show how to change a decimal to a percent.
• The third one can show the steps in solving a real-life fractions to decimal problem.
• The benefit of having videos that students can access online at any time is that they can go back and review if they are having difficulty with assignments. | |

Part D: Small Group Work

| What advice did you receive from your group? | Drea provided some great advice on adding more detail to the General and Specific Strategies. She also had me consider the use of icons for similar tasks, where I would use animations, and would I include audio in my PowerPoint.

Ali provided good questions about pre-test, post-test and embedded feedback questions.

Marguerite provided great advice on referencing my functional and formal characteristics section and ensuring my references were accurate. |
| What advice did you incorporate into your | I utilized Marguerite's advice with respect to ensuring I referenced functional and formal characteristics section, because it is important to back up my reasoning in my |

project? Why?	design with expert references. I also included my objectives from assignment 2 as she suggested. I am not sure why I reworded them, I think I wanted to keep that section short and sweet, but I liked how putting in the work from Assignment #2 made it more detailed and clear to the reader. I also considered Ali's advice with testing and felt that I had covered pre and post tests well in my explanation but could have included more about embedded feedback. I added more detail to section 6 of Gagne's 9 steps of instruction on page 13.
What advice did you decline? Why?	Drea provided great advice on icons and incorporating sound into my PowerPoint. She has a lot of experience teaching Distance / online education so I found her comments invaluable. I was unsure how much I would utilize her advice as this class is meant to be taught in a blended format, both face-to-face and online. At the present time I felt that I didn't have to include this detail as most sections would be taught in class, but if I was to teach this online or in a flipped classroom style I would definitely take these points into consideration.
Briefly, what advice did you offer to your group mates?	I provided advice to Drea's paper, specifically small edits like making links to other websites hyperlinks so that reads could access the documents. I also found that she had designed her paper very well and that I could not find many areas that needed more assistance. With Ali's paper I could see he was struggling with formatting using Google Docs, so once he provided editing permissions I went in and suggested he get rid of whitespace and other formatting. I tried to assist him the best I could with his content in the specific strategies area. I felt Ali needed more assistance so I informed him that if he had any further questions to contact me. I figured he needed time to work more on his sections

	before I provided further suggestions. I took time to look at others papers outside my group and provide encouragement and a suggestion if I noticed anything that needed assistance. This was a difficult assignment so at times I think we were all unsure if we were on the right track.
How often did you contribute to your group?	I contributed at least twice to both my group members with feedback. I tried to get on at least once a week to see how they are doing. I find it is a delicate balance giving feedback as you don't want to be bothering them too much and you want to allow them the time to work it to a good finished product, yet at the same time given our busy lives (young kids, other masters courses & assignments, life) I wonder if I should have provided more feedback and time to really go through their papers with a fine tooth comb.

Appendix A

KWL Chart

Fractions, Decimals & Percents

Know	Want	Learned
What do you know already?	What do you want to learn?	What have you learned?

Appendix B

Graphic Design for Smartboard Slides

Opening page of unit showing textbook page:

Sample page of Notes:

3.1 - Fractions to Decimals

To change a fraction into a decimal we divide the numerator

(on top) by the denominator (on the bottom).

$$\frac{1}{5} = 1 \div 5 = 0.2$$

Lets Explore:

Common fractions and there decimal equivalents (like decimals)

4 of 58

3.1 - Fractions to Decimals

Change these Common fractions to Decimals.

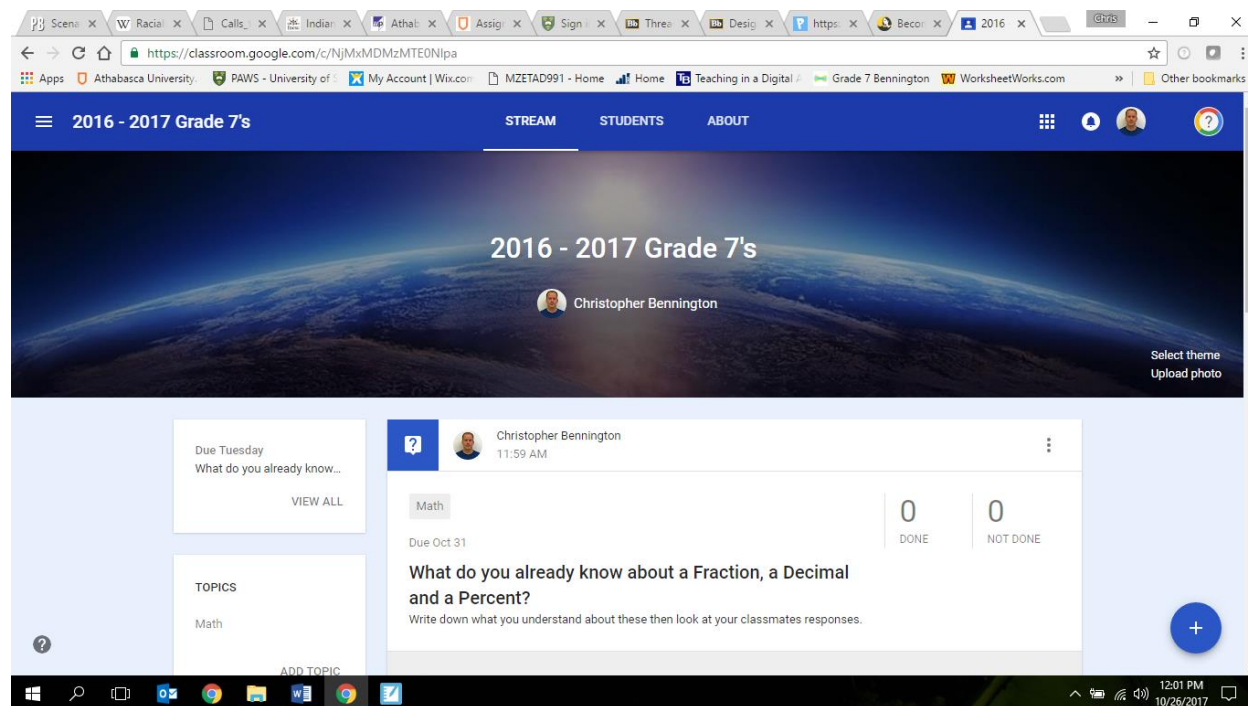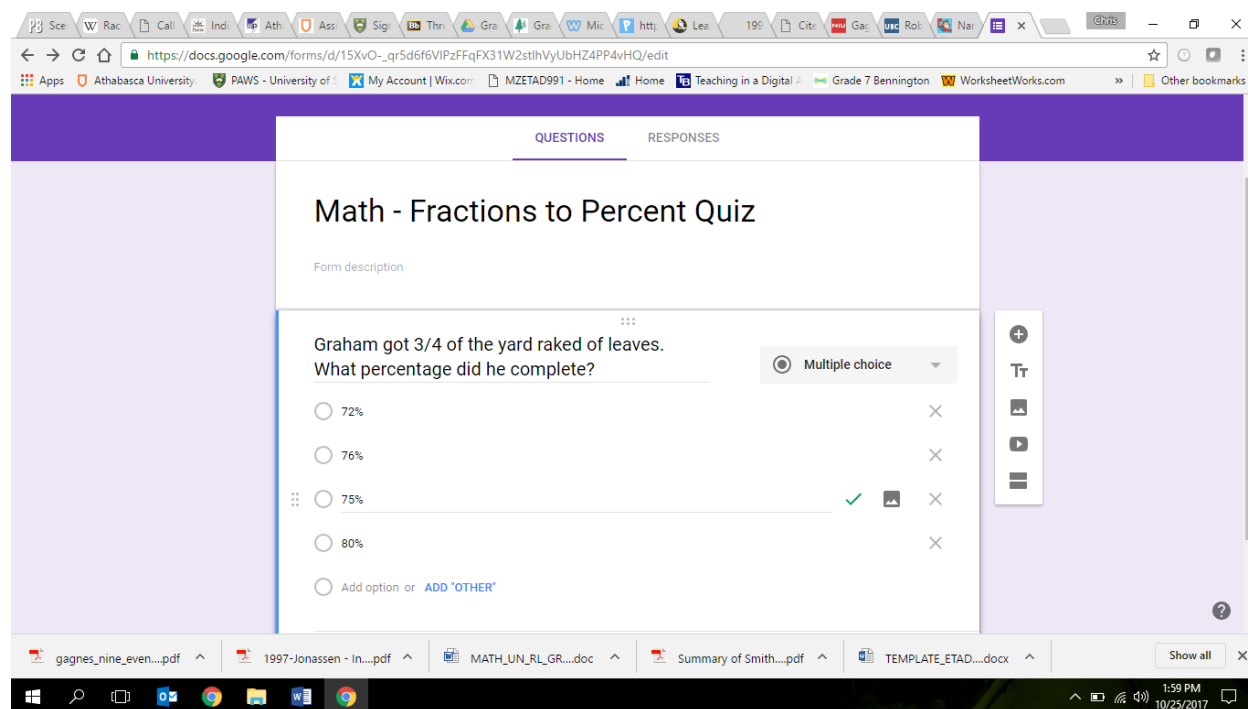| 1/2	1/10	7/10
1/4	2/10	8/10
3/4	3/10	9/10
1/5	4/10	1/25
2/5	5/10	1/50
3/5	6/10	1/100

5 of 58

Appendix C

Overview of Google Classroom & Google Forms for Quiz.

Screen shot of Google classroom with Entry Question:

Math Quiz Utilizing Google Forms:

Appendix D

Rubric for Grading Student Understanding

	Mastery	Proficiency	Approaching	Beginning
Change a Fraction to a Decimal	Students have shown a strong understanding of changing a fraction to a decimal and have achieved 90% success rate on questions.	Students have shown a grade level understanding of changing a fraction to a decimal and have achieved 80% success rate on questions.	Students are approaching a grade level understanding of changing a fraction to a decimal and have achieved 60% success rate on questions.	Student is struggling with changing a fraction to a decimal and is achieving less than 60% success rate on questions.
Change a Decimal to a Percent	Students have shown a strong understanding of changing a decimal to a percent and have achieved 90% success rate on questions.	Students have shown a grade level understanding of changing a decimal to a percent and have achieved 80% success rate on questions.	Students are approaching a grade level understanding of changing a decimal to a percent and have achieved 60% success rate on questions.	Student is struggling with changing a decimal to a percent and is achieving less than 60% success rate on questions
Solve a Percent Word Problem	Students have shown a strong understanding of interpreting and solving percent word problems. He/she achieved 90% success rate on questions.	Students have shown a grade level understanding of interpreting and solving percent word problems. He/she has achieved 80% success rate on questions.	Students are approaching a grade level understanding of interpreting and solving percent word problems. He/she has achieved 60% success rate on questions.	Student is struggling with understanding of interpreting and solving percent word problems. and is achieving less than 60% success rate on questions

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