SPED 513
Mathematics Instruction for Students with Special Needs

Strategic Math Series Project: Part 1

Implementation Schedule   _____ / 20
Develop an outline (or table) to show how you plan to implement the lessons.
Include the following:
- Date
- Lesson Number and Title
- Materials Needed

Explicit Teaching Cycle Lesson Plan   _____ / 20
Make certain you have included each phase of the explicit teaching cycle.
Write a brief paragraph under each of the following headings:
- Curriculum-based Assessment (Discuss the Pretest Lesson)
- Planning (This phase occurs after the Pretest Lesson)
- Advance Organizer (Lesson 1)
- Demonstration (Lesson 1)
- Guided Practice (Lesson 1)
- Independent Practice (Lesson 1)
- Maintenance (Lesson 1)

Annotated Progress Chart   _____ / 15
Read the Evaluation Guidelines carefully. Highlight key points. Create an example
progress chart that adheres to the guidelines.

Concrete Objects   _____ / 15
Create three different sets of concrete objects to be used for Lessons 1, 2, and 3.

Visual Aid   _____ / 15
Add embellishments to Learning Sheet 7 to enhance student learning.

PART 1 TOTAL: _____ / 85

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Strategic Math Series Project: Part 2

Teacher Reflection Log   _____ / 40
Include an entry for each lesson taught.
Include the following:
- Date
- Lesson Number
- How the lesson went
- What could be done to improve the lesson

Student Notebook   _____ / 50
Include the following:
- Learning Contract(s)
- Progress Chart(s)
- Pretest(s) / Posttest(s)
- Learning Sheets
- Math Minutes
- Facts Reviews
- Other

_____

_____

_____

PART 2 TOTAL: _____ / 90

STRATEGIC MATH SERIES PROJECT TOTAL: _____ / 175

Division Implementation Schedule		
Date	Lesson Number and Title	Materials Needed
09/02	Pretest	• Whiteboard and dry erase markers • Pretest; 1 per student • Learning Contract; 1 per student • Division Progress Chart; 1 per student • Individual Student Folders • Pencil; 1 per student
09/04	Lesson 1: Introduce Concrete Method of Division	• Whiteboard and dry erase markers • Paper plates or other small containers for grouping concrete objects; at least 9 for each student • Concrete objects, at least 21 of the same object for each student. • Index cards • Learning Sheet 1, one per student • Division Progress Charts • Pencil; 1 per student
09/06	Lesson 2: Begin Generalization of the Concrete Method of Division	• Whiteboard and dry erase markers • Paper plates or other small containers for grouping concrete objects; at least 9 for each student • Concrete objects, at least 24 of the same object for each student. (Checkers) • Index cards • Learning Sheet 2, one per student • Division Progress Charts • Pencil; 1 per student
09/10	Lesson 3: Complete the Generalization of Concrete Method of Division	• Whiteboard and dry erase markers • Paper plates or other small containers for grouping concrete objects; at least 7 for each student • Concrete objects, at least 21 of the same object for each student. (Legos) • Index cards • Learning Sheet 3, one per student • Division Progress Charts • Pencil; 1 per student
09/12	Lesson 4: Introduce the Representational Method of Division	• Learning Sheet 4, one per student • Division Progress Charts • Pencil; 1 per student
09/16	Lesson 5: Begin Generalization of the Representational Method of Division	• Whiteboard and dry erase markers • Learning Sheet 5, one per student • Division Progress Charts • Pencil; 1 per student
09/18	Lesson 6: Complete Generalization of the Representational Method of Division	• Whiteboard and dry erase markers • Learning Sheet 6, one per student • Division Progress Charts • Pencil; 1 per student
09/20	Lesson 7: Introduce the "DRAW" Strategy	• Whiteboard and dry erase markers • Learning Sheet 7, one per student • "DRAW" Strategy resource (from Ind. Student Folders) • Pencil; 1 per student

09/24	Lesson 8: Introduce the Abstract Method of Division	- Whiteboard and dry erase markers - Learning Sheet 7, (from Ind. Student Folder) - Learning Sheet 8, one per student - Division Progress Charts - Concrete objects (Fruit Loops) - Pencil; 1 per student
09/26	Lesson 9: Begin the Generalization of the Abstract Method of Division	- Whiteboard and dry erase markers - Learning Sheet 7, (from Ind. Student Folder) - Learning Sheet 9, one per student - Division Progress Charts (from Ind. Student Folders) - Pencil; 1 per student
09/28	Lesson 10: Complete Generalization of the Abstract Method of Division	- Learning Sheet 7, (from Ind. Student Folder) - Learning Sheet 10, one per student - Division Progress Charts - Pencil; 1 per student
09/30	Posttest Lesson	- Posttest handout, 1 per student - Division Progress Charts - Learning Contract - Pencil, 1 per student

Lesson Plan

Name Ali Kutter
Date: 7/31//2019

About the learner(s) (Age/grade level, backgrounds and interests of students): Eric is a sixth-grade male who qualifies for special education services under the primary category of Specific Learning Disability and secondary category of Emotional Behavioral Disorder. Eric is academically low as a result of having missed so much instructional time due to his behavior and, also having a learning disability. Eric lacks confidence when it comes to mathematical concepts, he frequently says he is dumb. Eric loves to play video games, watch/play sports, draw, and is a huge relationship student.

Learning Goal: Eric will increase his ability to use multiplication and division to represent real world problems from the current level of only demonstrating addition/subtraction real world problems to demonstrating multiplication and division by writing number sentences as measured by curriculum-based assessments.

> Objective: Given a number sentence using multiplication or division, Eric will manipulate concrete objects to create draw a representation of the number sentence from the current level of attaining 40% to attaining 75% accuracy as measured by curriculum-based assessment by the next testing period.

IEP Goal: Given two or more sets of manipulatives, Eric will apply the concept of division to combine the sets and find the total amount with 80% accuracy in 4/5 trials.

Academic Standard: Content Standards/ Benchmark (if applicable): 3.1.2.4: Solve real-world and mathematical problems involving multiplication and division, including both "how many in each group" and "how many groups" division problems.

Baseline Data (related to learning goal): Based on classroom assessments, when given 10 2-step word problems (orally), Eric is able to set up an equation using concrete manipulatives to solve the problem with 80% accuracy.

Lesson Objective: At the end of the lesson, given a 10-question quiz, Eric will answer the questions at 80% accuracy.

Planned Supports/Adaptations
  I. Expressive and Receptive Communication Supports
  • Academic Language: *compute, division, equals* .
  • List key vocabulary to teach: *groups, divide*
  • The learner will use listening skills when the word problems and the quiz are read to him.

Other Supports (could be any of these depending on learner(s) needs)
  I. Learning environment – Instruction will take place in the general education classroom, with scaffolded support during Eric's functional academic block. Assessment will take place in a 1:1 setting in quiet environment due to Eric's lack of confidence in his mathematic skillset. He tends to act up when there are other student's around to avoid the assignment or group and so others don't hear him being read to.
  II. Content – The problems used to model were specifically chosen as a topic of interest for Eric. He is into sports and will be more engaged if it is a topic of interest.
  III. Instructional strategies - There will be more emphasis on modeling during this lesson and the teacher doing the reading to assess his comprehension and not his fluency.
  IV. Materials
  V. Social/emotional/behavioral supports - Eric will need to be reminded of the expectations at the beginning of the activity and given verbal praise throughout the lesson to help keep him engaged and on task.

Instructional Resources & Materials: (list)
- Chalkboard and chalk
- Paper plates; at least 9 per student
- Concrete objects; at last 21 of the same objects for each student (checkers, Legos, Fruit Loops)
- Learning Sheet 1, one per student
- Division Progress Charts
- Overhead projector and screen
- Overhead transparency of Learning Sheet 1
- Writing implements for students
- Smartboard, overhead display

Assessment Tools and Data Collection Method (Attach your tools)

Measurable criteria in the objective
Create concrete examples of division problems.
Comprehension and knowledge via answering questions to better understand the concept.

Procedures:

Time	Lesson Component	Teacher Questions, Instructions, & Feedback	Anticipated Student Response
1-2 Minutes	**Attending Cue:**	*"1-2-3, Eyes on me".* *"Thank you for being such great listeners. Please put away all of your materials except a pencil."* *"What is the only thing we need left out?"* *"Great listening!"*	Students look at the teacher *"Our pencils!"* Clean up, keep pencil out.
1-2 Minutes	**Anticipatory Set:**	Lights turned off. Transition music begins. "You All Ready for This" by 2Unlimited.	
5-7 Minutes	**Review/Link to Previous Knowledge:**	*"Who remembers the last time we worked with paper plates and Cheerios?"* *"Today we are going to work together using Checkers to learn more about groups. This time we will be focusing on our division skills. Do you remember the "Plates and Pennies" activity we worked on during our multiplication unit?"*	Students responses. *"Yes"*

		"Today we are going to work with "Plates and Checkers". We are going to practice division using Checkers. We will use them to do problems just like we did yesterday."	
		"Each morning during Group, you have been answering questions about days and weeks.	
		When we answer questions about how many weeks there are for a given number of days, we are dividing by 7."	*"Yes"*
		Indicate calendar, *"How many days are in one week?"*	
		"If there are 14 days how many weeks is that?"	*"Seven".*
		"We are finding how many groups of seven there are in 14."	*"Two".*
		We can write it like this:"	
		Write on smartboard: 14/7=2 using 3 symbol types.	
		We can multiply to check the answer,"	
		Write 2 x7 = 14 on the smartboard.	
		If there are 21 days, how many weeks is that?	*"Three".*
		How did you know that?	Students respond.
5-7 Minutes	**Prerequisite Check:**	**Review:** ** Implement white board response protocols with students. Write on board, elicit responses while monitoring for comprehension. (Use of student white boards and dry erase at table held up with answer.)	Various responses using whiteboard and dry erase from table tools.

		Division is splitting into equal parts or groups. It is the result of "fair sharing". We use the ÷ symbol, or sometimes the / symbol to mean divide. Division is the opposite of multiplying. "OK- you all did very well! I need 2 questions from the class about our division review before we move on. Who would like to begin?" (Implement review protocol of 2 questions before lesson) "Thank you, Student 1 and Student 2 for volunteering. Your questions reminded me that..." (Note if Eric volunteered a response voluntarily.)	Two students ask questions about what was reviewed before moving forward.
1 Minute	**Lesson Purpose/Rationale:**	"Today we are going to talk more about how division is how many groups go into another number. Who can remind me what groups mean?" "Correct. Everyone ready? (monitor for attention) (Implement SLANT protocol.)	Things that are together. "Yes. Let's get going!"
2 Minutes	**Vocabulary Instruction**	Explain the words that will be used during the lesson: Groups Divide/Division	
5-7 Minutes	**Instruction:**	"Today we are going to work together using Cheerios to learn more about groups. Do you remember the "Plates and Pennies" activity we worked on?" "Today we are going to work with "Plates and checkers". We are going to practice division using checkers. We will use them to do problems just like we did when we were learning multiplication." (write on board while saying them).	Various student responses.

		"Are you ready to learn?"	"Yea!"
5-7 Minutes	**Modeling:**	"Friends, I am now going to model how I want you to answer your questions by thinking out loud. Pay attention to the different steps I take when I am completing my work. Is everyone ready to listen to how I think through my work?" (Point to projected worksheet question 1) "OK, what do I need to do first. Well, I need to read the directions." (Proceed to read out loud). "Ok, I get it. Now I need to get my plates and problem sheet ready. Question One asks says: 12 divided by 3 equals how many? I know that the / sign means I will be dividing and the = sign means equal to. (Indicate on board) So, I count out 12 checkers and place them on my desk (count and place on desk). Then I will put the others there until I need them later. Let me look back at the question. 12 / 3. I will take my plates and count out 3. This second number tells me how many checkers to put in each group. Each of these plates represents one group. Hold up plate. So, I out three checkers onto a plate to show there are 3 checkers in a group. Take one plate and place three checkers on it. Do the same with plates 3 and four. Once all 12 checkers are on plate, I	"Yes."

		put the remaining plates to the side.	
		Now to find the answer 12/3, I need to find how many groups of three checkers are in 12. To do this I count the number of plates, or groups that have 3 checkers on them. (Point and count. Write the number 3 four times on the smart board to show clearly four 3's equals 12.)	
		When I count and divide objects, I computed the answer to the problem, 12 divided by 3. Sine I have 4 groups of plates with 3 checkers on each plate, I know that there are four 3's in 12. So, 12 divided by 3 equals 4. I need to write that on my Learning Sheet, class you can also write that in yours which are located in your Assignment Bins.	*Students retrieve Learning Sheet 1 and pencil from Assignment Bin*
		"Ms. Smith will now pass out the Assignment Bins to each table."	
		(instructions are on smartboard.)	9
		"How many plates?"	
		"How many cups?"	1
		"Ok- now I need 2 questions before we can move on. Student 1 and Student 2 have already volunteered, let's get some new learners involved?"	Student 3 and 4 ask questions.
		(Implement review protocol of 2 questions before lesson)	
		"Thank you, Student 3 and Student 4."	

		Answer questions and move on.	
5-7 Minutes	**Guided Practice:**	*"Friends, I really liked how quickly and quietly everyone got their supplies ready."* *"Let's do a buddy check to make sure we have everything we need before we begin."* (Implement Buddy Check protocol) *"Thumbs up if your buddy is ready to learn!"* (Proceed to model 2-5 with limiting support. Q5 is scored so do not provide answer, simply guide). Have students look at worksheets from Assignment Bin. Work through the 5 "We Do!" problems as a group. I will use projector to model my work. I will talk through each step gradually reducing scaffolding when appropriate. I will record Eric's data onto his daily log when finished.	Students work with seat buddy to make sure supplies are accounted for. (Students put thumbs up or indicate as per adapted protocol an affirmative response)
5-7 Minutes	**Independent Practice:**	*"I am so impressed with your hard work."* *"It is now time to work on the "You Do!" problems located in your Assignment Bins. Those are number 6 to 14 on the Learning Sheet."* *"Remember to use your plates and checkers for each answer. When you finish, stop and put down your pencils."* *"What are you going to remember?"* *"What do you do when you are done?"* *"Is there any talking during "Mazes and Dots"?"*	 *"Use plates and checkers for each problem."* *"Mazes and Dots folder"* *"No!"*

		Collect data as students finish. Eric will be taken to a breakout room to work with Ms. Smith during the Independent work. Ms. Smith will record results in Eric's daily log. Circulate to monitor progress and provide feedback.	
3-5 Minutes	**Closure: (summarize points and preview the next lesson)**	*"Thank you for your hard work today!"* *"Today you have worked hard on division problems. We will continue to work on this tomorrow."* *"In your "Activity Bin" is your "Exit Ticket". Please take it out at this time and complete it."* *"I will come around to collect them as I do a "Tidy Check" of your workspace."* Implement Exit Ticket and Tidy Up protocols. Bring up graphic on smartboard.	Students cleaning up and/or completing "Exit Ticket".

Lesson Evaluation (To be filled out after the lesson)
Did the students learn the lesson objective? How do you know this? What went well? How could you improve the lesson?

I feel that Eric built on his prior knowledge very successfully. I was explicit in my sequence and consistent in lesson presentation so that the skills were concentrated on rather than any new lesson structure. I would improve the lesson by reviewing the data collected and the exit ticket responses so I can include any gaps in student comprehension and reflect on whether or not Eric, as well as the rest of the class, was engaged. I would also confer with Eric's para-professional, Ms. Smith, as to how she felt Eric preformed on this lesson.

Concrete Objects: Division

1) Checkers

2) Legos

3) Fruit Loops

Paper Plates:

D

Discover the sign.
- Find the sign.
- Circle the sign.
- Say the name of the sign aloud.
+ - x = /

R

Read the problem.
- Say the problem out loud.

A

Answer, or draw tallies and/or circles and check your answer.
- Use your resources.
- Be sure to double-check your answer.

W

Write the answer.
- Write down the answer to the problem.