Lesson Plan Template
Date:

Grade: 4	Subject: Math
Materials: Prime number sheet and 3 markers for each student	Technology Needed: n/a

Instructional Strategies:	Guided Practices and Concrete Application:
x Direct instruction ☐ Guided practice ☐ Socratic Seminar ☐ Learning Centers ☐ Lecture ☐ Technology integration ☐ Other (list) Peer teaching/collaboration/ cooperative learning x Visuals/Graphic organizers ☐ PBL ☐ Discussion/Debate ☐ Modeling	x Large group activity x Hands-on x Independent activity ☐ Technology integration ☐ Pairing/collaboration X Imitation/Repeat/Mimic ☐ Simulations/Scenarios ☐ Other (list) Explain:

Standard(s)	Differentiation
Determine whether a given whole number in the range 1-36 is prime or composite. **Objective(s)** By the end of the lesson students will demonstrate their distinction of prime and composite numbers by color-coding a number chart. **Bloom's Taxonomy Cognitive Level:** Apply	**Below Proficiency:** Students below proficiency can remember that prime numbers have 2 factors, composite numbers have more. With assistance, they can fill out some of their number chart. **Above Proficiency:** Students above proficiency will understand that prime numbers only have the factors 1 and themselves. They will be able to complete their number chart without listing out factor pairs. **Approaching/Emerging Proficiency:** Most students will understand that prime numbers have 2 factors and composite numbers have 3 or more. They will work through their number chart, writing out some of the factors to check whether or not the number is prime or composite. **Modalities/Learning Preferences:** • **Visual:** Visually demonstrate coloring in the number chart and solving a tricky question • **Auditory:** Verbally explain prime and composite and the expectations of the assignment • **Kinesthetic:** Students will move from the front of the classroom to their table spots when starting independent work • **Tactile:** Students will color in their own physical number chart

Classroom Management- (grouping(s), movement/transitions, etc.)	Behavior Expectations- (systems, strategies, procedures specific to the lesson, rules and expectations, etc.)
Students will start in whole group instruction and then move to their table spots and work independently. Pass out the papers first to the students who are sitting quietly. Call students back together to look over something that may have been tricky for them before transitioning to the rest of their math groups.	Students will stay quiet and respectful when in whole group. They will be called on based on who has their hand raised or who needs to bring their attention back to the front of the class. Students are expected to follow directions and work independently to complete their number chart.

Minutes	Procedures
2	**Set-up/Prep:** Prep anchor chart and paper
5	**Engage: (opening activity/ anticipatory Set – access prior learning / stimulate interest /generate questions, etc.)** "Who can tell me what you have been working on during math groups with Mrs. Hoovestol? Remind me, what is a factor? Is that the same thing as a multiple? How are they different? Today we are going to learn 2 new vocabulary words. These words are going to help you sort numbers into 2 groups based on their factors." (work through anchor chart: Prime= Only 2 factors Composite= 3 or more factors)
13	**Explain: (concepts, procedures, vocabulary, etc.)** "With prime and composite numbers we aren't looking to find all the factor pairs. If you can think of just one factor besides 1 and the number, then you already know that it is composite and you don't have to figure out any other factors. If you get stuck and if it's a low enough number try starting at 1 and counting up to that number, checking to see if any of them are factors. For example, I have the number 7. I have an idea that maybe it's a composite number. This is how I would check that (write out 1-7): 1 is a factor (put a check mark above it), but we know that prime numbers have 1 as a factor so lets keep going. Check 2: is 2 a factor of 13? No (put an x above it). What about 3, does 3 go into 13?, (etc. until you get to 7 which is a factor). How many factors do we have here? (Just 2). Lets look back of the prime and composite number rules: If 7 only has 2 factors, would it be prime or composite?" "let's investigate a couple numbers together. Someone give me number between 1 and 30 and we'll figure out if it's prime or composite. Ok the number is (x), think quietly in your head if you think it is prime or composite. Alright, without shouting it out, who has an idea of which it could be? How did you figure that out? Can anyone think of a factor that is not 1 or that number? Etc." After trying 3 together "Alright for this one we're going to do something a little bit differently. The number we are doing is 2. I want

	everyone to close their eyes, maybe even put your head down if you think that would help you not peak. (after 30 seconds) Keeping your eyes closed, everyone put their hand in the air. If you think that 2 is a prime number, I want you to close your fist, if you think that it is composite, keep your hand open. Ok open your eyes. Who can give me a factor pair of 2? Are there any more pairs? When there are just 2 factors, is it prime or composite? That one may be a bit tricky since we think of 2 as having lots of multiples, but remember that prime and composite numbers are just looking at factors, which is smaller numbers.
17	**Explore: (independent, concrete practice/application with relevant learning task -connections from content to real-life experiences, reflective questions- probing or clarifying questions)** "I am going to give you each a paper that looks like this (show example). It is a number chart with 1-32. Below is a table, kind of like the legend on your amusement parks. You are going to choose 3 colors (markers, crayons, pencils) and fill in the empty squares. (Demonstrate) One color will be prime numbers, one will be composite numbers, and the last one will be for neither. Once you have a color picked for each, work through the number chart and color each square the correct color. On mine I've chosen to make prime numbers red and composite numbers blue. As I go through my chart and I come across a prime number, I'm going to color it red. If it is composite, then I would color it blue. What questions do you have about that? You are done when each of the squares on the number chart are colored. If you finish early you can work with your Fact practice flashcards or maybe make some factor rainbows. Quickly before we get started lets remind our brains how to know if a number is prime or composite. (Student) what does it mean for a number to be prime? (Student) how many factors does a prime number have? (Student) what does it mean for a number to be composite? (Student) how many factors does a composite number have? Alright, are there any questions about what I want you to do on this sheet? Make sure you put your name on it and bring it to me when you are done; you are going to turn this in! When I give you your paper you can go ahead and bring it to your spot and start working on it" Pass out the papers first to the students who are sitting quietly. Walk around and monitor how students are doing. Encourage students to go in number order if they are having trouble getting started.
5	**Review (wrap up and transition to next activity):** "Meet me back at the front! There's something kind of tricky on this sheet. Did anyone use the color for where it says neither? Where did you use that color? Let's look at the number 1. What is the factor pair for 1? (1x1) When we list factors of a number do we ever put repeat? Since 1 is the only factor of 1, it isn't even a prime number. How many factors does a prime number need? 1 has even less then that! Great solving if you caught that, but if you did not that's totally fine. It actually confuses a lot of people because they forget that prime numbers have to have 2 factors."

Formative Assessment: (linked to objectives, during learning)	Summative Assessment (linked back to objectives, END of learning)
• **Progress monitoring throughout lesson (how can you document your student's learning?)** Students participate in the 'eyes closed' question. Students are correct if they make a fist.	Students will turn in their completed number chart

Reflection (What went well? What did the students learn? How do you know? What changes would you make?):

I found this lesson to be a bit more difficult since it was introducing a concept rather than building on or reviewing one. The students seemed to grasp the concept while we were working together, but then while they were working on their charts individually, I came across most of the students being confused still. I think that the students were partly still confused by the difference between factors and multiples, which is something they had been having trouble with all week, and also confused by the fact that a factor and a factor pair were not the same thing. Some students thought that since the number 6 only had two factor *pairs* that it was prime (since prime numbers only have two factors). Many also kept forgetting that 1 and the number were factors (another thing they have been struggling with all week) even though I said that a prime number only had 1 and that number as factors. When collecting the data, only five students finished the chart in the time given. Out of those five, three students were 100% correct and the other two only had one or two errors. I also calculated the percentages of the students who did not complete the whole chart and they were mostly in the high 70s-low 80s percentage wise of what they had completed. One student received a 54% which is very interesting because Mrs. Hoovestol said that he is usually at the top of the class when it came to math. I wonder if he was over-thinking it or if he just could not grasp the concept for some reason. I actually don't think that I would change much about this lesson except for taking more time during the instruction section to give the students some strategies for how to figure out if a number has more than 2 factors.

Lesson Plan Template
Date:

Name _____

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32

☐ Prime Number

☐ Composite Number

☐ Neither