

**CONCEPT ATTAINMENT LESSON PLAN**  
**(Case Study 5.2 Lesson Plan)**

**Subject Area:** *Mathematics*

**Specific Content:** *Prime and composite numbers*

**Grade Level:** *5th*

**Length of Lesson:** *35-40 minutes*

**Instructional Objective(s):** *The learner will state the critical attributes of prime and composite numbers.*

**State Content Standard / Benchmark / Grade Level Expectation:** *The learner will find the prime factorization for any number between 1 and 50 and express in exponential notation.*

**Long-Term Unit Objective:** *The learner will find the prime factorization for any number between 1 and 50 and express in exponential notation.*

**Yesterday's Lesson:** *Unit test on division of four-digit numbers with regrouping and remainders*

**Tomorrow's Lesson:** *Practice with primes and composites – Introduce Sieve of Eratosthenes*

**Prerequisite Knowledge or Behaviors Needed:**

Skills: *Experience with Concept Attainment*

Concepts *Basic multiplication and division facts*

*Prior exposure with prime and composite numbers*

*Critical attribute*

Behaviors: *Raising hands to contribute to the lesson*

*Working with partners and in table groups*

**Why is the Content of Today's Lesson Relevant for Your Students?**

*Understanding the distinction between prime and composite numbers provides the background knowledge for advanced mathematics.*

**Materials:** *List of YES/NO examples*

<u>YES</u>	<u>NO</u>
2	4
3	6
4	8
7	9
11	10
12	12
17	14
19	15
23	
29	

Where are your materials to be kept until their use during the lesson? *Table in front*

When will your materials be passed out? *N/A*

How will materials be passed out? *N/A*

**Model of Teaching:** *Concept Attainment*

**Procedures**

List each procedure according to stages of Concept Attainment

1. *Mental math warm-up:*
  - 6 x 4*
  - Divided by 2*
  - Times 3*
  - Plus 4*
  - Times ½*
  - Times 8*
  - Divided by 4*
  - Minus 4*
  - Minus 24*
  - Divided by 4*
2. *Working with critical attributes of each set toady – YES and NO examples*
3. *Scratch paper provided*
4. *First set of YES/NO examples – several offered*
5. *Speak with a partner*

6. *First hypothesis → comments?*
7. *Additional YES/NO examples*
8. *Additional comments on first hypothesis*
9. *Additional YES/NO examples*
10. *New hypotheses*
11. *Comments*
12. *Additional YES/NO examples*
13. *Elicit thinking, comments on responses*
14. *Clarify vocabulary as needed based on student responses*
15. *Review concepts of prime and composite numbers directly*

Include each question you are planning to ask students in the appropriate place in your lesson plan

1. *What is your hypothesis? (This is repeated throughout the lesson.)*
2. *Why do you think this is so? (This is repeated throughout the lesson.)*
3. *What do you think about what \_\_\_\_\_ just said? (This repeated throughout the lesson.)*
4. *Do you see anything new in these examples?*
5. *Can you draw your path to help explain your thinking?*
6. *Did any other tables...?*
7. *How can you explain your thinking?*
8. *Can you provide some new examples of YES/NO numbers?*

Closure: Tomorrow another review of primes and composites – Sieve of Eratosthenes

**How did you address student learning styles during this lesson? Describe all that apply.**

Visual            *Recording examples on board*

Auditory        *Verbal discussion and presentation*

Kinesthetic     *Scratch paper available if they wanted to experiment with numbers at their tables*

Tactile           *Manipulatives—such as unifix cubes—could be provided*

Other approaches:    *N/A*

**Assessment Criteria:**

What tangible evidence will demonstrate your students' learning today?

*Students will write down their recounting of the lesson as it unfolded. How did the class go through their own assessment of the ideas that emerged?*

*As homework, they will use the YES/NO examples used in class and add 5-6 more.*

What will be considered quality work?

*Accurate recounting of today's class process. Correct responses for homework in each column*

Do you need a rubric to structure your assessment? *N/A*

Will students also self-assess using this rubric?    *N/A*

**Gender or cultural concerns may affect your instructional or assessment choices in this lesson. If appropriate, identify these and describe how you will address them.**

*Students working in table groups will provide opportunities for students who best learn material during discussions. Lesson assessment will also be done in partners as students backtrack their thinking during the lesson.*

**Instructional Modifications – Describe a student in your class who has special needs. Consider how you might modify your instruction and / or assessment for this**

**student during this Direct Instruction lesson. Traditional print, Internet and NETS resources can assist you.**

*ESL student in Spanish is on grade level in math. She will be encouraged to contribute and to explain her mathematical reasoning in English—with the help of a bilingual student if needed.*

**Technology – What technology might enhance this lesson or this unit at some point? Traditional print, Internet and NETS resources can assist you.**

*This Interactive Math Site has hundreds of games for students to play across the math curriculum:  
[http://edweb.tusd.k12.az.us/ekowalcz/math/elementary\\_web\\_sites.htm](http://edweb.tusd.k12.az.us/ekowalcz/math/elementary_web_sites.htm)*

**How will you provide practice for this objective?**

*Traditional homework  
Center activities using manipulatives*