

DIRECT INSTRUCTION LESSON PLAN
(Case Study 4.2 Lesson Plan)

Subject Area: *Math*

Specific Content: *Improper fractions and equivalent mixed numbers*

Grade Level: *6th Grade*

Length of Lesson: 30 minutes

Instructional Objective(s): *The learner will write any improper fraction as a mixed number.*

State Content Standard / Benchmark / Grade Level Expectations:

Math – Patterns, Relationships, and Functions

Content Standard: Students describe the relationships among variables, predict what will happen to one variable as another variable is changed, analyze natural variation and sources of variability, and compare patterns of change.

Middle School Benchmark: Represent variability or change by ordered pairs, tables, graphs, and equations.

Long-Term Unit Objective: *The learner will add, subtract, multiply, and divide any two mixed numbers with unlike denominators.*

Yesterday’s Lesson: *The students worked with a partner and used fraction manipulatives to better understand equivalent mixed numbers and improper fractions.*

Tomorrow’s Lesson: *The students will learn to write mixed numbers as improper fractions, which will be an inverse of today’s lesson.*

Prerequisite Knowledge or Behaviors Needed:

Skills: The students are able to do multi-digit division and multiplication by hand without the use of a calculator. They are also competent in using calculators to perform multiplication and division.

Concepts: The students can identify improper fractions and mixed numbers and know that there are two ways to write the same fractional amount.

Behaviors: The students know that to answer or ask a question they must raise their hand and must wait until the teacher calls upon them to respond. The students also know that they are only allowed to work with partners on math problems when the teacher has specifically told them that it is acceptable to do so.

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

Fractions can be used to understand real-life ratios. Students need to understand how to work with improper fractions because they will encounter fractions in the business world and later in the academic world.

Materials:

Teacher materials:

- dry-erase board*
- dry-erase makers*
- dry-erase eraser*

Each student needs these materials:

- pencil with an eraser*
- worksheet*
- additional paper to show work*

Where are your materials to be kept until their use during the lesson?

The teacher will keep the worksheets on her desk until the appropriate time.

When will your materials be passed out?

The students will receive their worksheets after the teacher has finished modeling and they will then begin the guided practice.

How will materials be passed out?

The teacher will draw the names of two students from the stick jar she keeps on her desk. These students will be responsible for passing out the worksheets to the students in the class. Each student is then responsible for turning in his or her worksheet in the green class folder upon completion.

Model of Teaching: *Direct Instruction*

Procedures

List each procedure according to stages of Direct Instruction.

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

1. Focus Activity

- a. The teacher questions the students about the difference between a mixed number and an improper fraction and facilitates a discussion around this topic.*

-What is the difference between a mixed number and an improper fraction?

-What have we been working on the last few days?

-What discoveries did you make?

-What did we call those two ways of writing the amount?

-Why did we say “mixed?”

-What did we call the other way to write the same amount?

2. Stating the Objective and Rationale

a. The students will learn to change improper fractions into mixed numbers without using the fraction manipulatives.

b. It is much easier and more efficient to compute the answer than to always rely on using manipulatives.

3. Presenting Content and Modeling

a. The teacher begins by explaining the content and then models how to solve the problems on the board in front of the entire class. She also provides written steps to solve each problem on the board.

4. Receiving and Providing Feedback: Checking for Understanding

a. The teacher checks for understanding by having students actively participate in the lesson when answering questions or writing on the board.

-What do I do first, etc.?

5. Guided Practice

a. The teacher instructs the students to independently complete the first two problems on the worksheet she has provided. When the students have completed those problems, they must raise their hands and the teacher will check their answers. If the work is correct, the students will then complete the worksheet.

-When you are finished with the worksheet, where should you put it?

-What do you need to do after you have put your work into the folder?

6. *Independent Practice*

a. *The students complete their worksheet independently.*

7. *Closure*

a. *The teacher asks one student from the class to explain what he or she would say about class today if the school principal stopped him or her in the hallway.*

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

Visual- *The teacher modeled how to change improper fractions into mixed numbers on the board. She also provided written directions of each step involved in solving this problem and demonstrated this concept multiple times. The students were also given a worksheet to complete. The teacher also created a chart during her first example for students to refer back to as they try to solve later problems.*

Auditory- *Along with written directions, the teacher verbalized the directions for converting improper fractions into mixed numbers. The teacher also checked the students' understanding by asking them probing questions throughout the lesson.*

Kinesthetic- *The students can complete a math puzzle once they have finished their worksheets.*

Tactile- *Although the students had more tactile learning incorporated into their previous lesson when the teacher provided the students with manipulatives, the teacher still incorporated some tactile learning into this lesson. The students were writing out each problem as they solved it in steps. The students also completed a worksheet independently.*

Assessment Criteria:

What tangible evidence will demonstrate your students' learning today?

The teacher will be able to assess student work from the worksheets the students completed. They are required to show work for each step as they solve a problem, so that the teacher can better understand how the students found their answers.

What will be considered quality work?

The teacher considers quality work in mathematics to be work that is written legibly and that shows each step in the students' problem solving. It is also clear to the teacher what the answer is for each problem because it is circled.

Do you need a rubric to structure your assessment?
No, a there will not be a rubric to structure this assessment.

Will students also self-assess using this rubric?
The students will not be self-assessing for this assignment.

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.

There are no gender or cultural concerns that the teacher feels will influence this lesson. The teacher does not feel that any modifications in this area are necessary based on the students in the classroom.

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.

In this classroom, one female student has a learning disability that can sometimes cause confusion when she is working with letters or numbers. She was diagnosed with dyslexia three years ago and the teacher is aware of the adjustments this student may need on certain assignments. In this lesson, the teacher has cut the number of problems in half, and she has asked the student to stop after each two problems so that she can check her answers with the teacher.

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

The internet is an excellent resource for this unit on improper fractions and mixed numbers. The teacher could allow certain students to do games and quizzes online that involve improper fractions and mixed numbers. There are several websites that offer age appropriate activities that students could complete independently or in groups. This website provides excellent activities:

<http://www.visualfractions.com/MixtoFrCircle.html>

How will you provide practice for this objective?

Although the students will not be completing homework on this assignment the night after the lesson is taught, the teacher does assign homework throughout the year that is a review of previous concepts the students have mastered. The students will review the concept of improper fractions and mixed numbers later in the semester with some

homework. Also, later concepts will build on this lesson, so students will be practicing this material regularly over the next few weeks.