



House Floor Plans

Grade : Sixth

An integrated lesson plan covering 8 to 9 sessions of approximately one hour each.



Lesson-Planning Approach

Some learners perceive their “world” as a whole, where all things are interconnected and dependent upon each other. These “integrated” students face major challenges in coping with our dominant educational, social, and economic systems, which tend to present information in a linear fashion without the necessity of integration into meaningful context. Integrated students are at-risk of failing as they attempt to grasp information in ways that do not match their experience. Among large populations of at-risk students are many from Native American and similar cultures who do not regard their world as a sum of parts but as a blend of all that they experience.

This lesson plan does include some traditional, linear approaches to delivering information (checklists, rules, analysis, problem solving and organization). In addition to the traditional, linear delivery of information, this lesson plan also includes some of the following strategies, designed to appeal to at-risk students as they learn academic/life skills:

- ❖ Integration of technology
- ❖ Story telling/anecdotal information
- ❖ Non-competitive group and team work
- ❖ Performance-based assessment and rubrics
- ❖ Visual presentations and practice through technology and other means
- ❖ Project-based assignments that integrate family and community
- ❖ Activities appealing to multiple intelligences (Gardner)

Lesson Overview

Given a certain amount of square footage and room demands, students will design a floor plan for a house. They will use Microsoft Word Draw to draw the floor plan.

Lesson Objectives

Lesson Project: Students will design a floor plan for a house after being given a certain amount of square footage to work with and room demands from an imaginary client. They will need to be able to calculate area, perimeter and dimensions.

Project Objectives: When students complete this project, they will be able to...

- Students will learn how to work within the constraints of a certain parameters.
- Students will use Word Draw to complete a task.
- Students will use measurement skills including area and measuring with feet and inches to complete a real world task.

Integration of Other Functional/Academic Skills: (Critical thinking is required throughout the lesson.) Students will be able to...

- Speak for an audience other than the teacher.
- Use technology in presentations.

State/National Standards (Complete as Appropriate)

Colorado State Standard Math #4 – Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Colorado State Standard Math #5 – Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

Colorado State Standard Reading and Writing #2 – Students write and speak for a variety of purposes and audiences.

Websites

Required: <http://www.houseplanguys.com> - ideas on every different style of floor plan you can think of.

Support: No Support Sites

Pre-requisites

- Students will need to know how to find area and perimeter.
- Students need to know what a proportion is and how to draw to scale.

Required Materials

- Computers with A Draw program
- Grid Paper
- Rulers
- Compasses

Handouts

- Example of Floor Plan
- Requests of the Clients

Required Equipment/Technology

- Computer with Draw
- Printer
- Overhead Projector
- Internet Access

THE LESSON

Note: Students do not learn from what you do but from what you have them do.

Preparation

Activity	Time Estimate	Instructor Notes
Area and Perimeter of Irregular shapes	120 min.	Review how to compute the area of regular and irregular shapes. They will also learn how to compute perimeter of these shapes.

Presentation

Activity	Time Estimate	Instructor Notes
Example Floor Plan	60 min.	Using an overhead transparency, go over the example floor plan with the students. Go over how to compute the area of the sample floor plan. Let students calculate the area and perimeter of the example.

Practice and Performance

(Students help you perform the project steps. You help them perform project steps. They perform steps with little or no instructor help.)

Activity	Time Estimate	Instructor Notes
Story	30 min.	A family has contacted you to design a home for them. They want the house to contain all of the items on the list and the exact square footage provided. Go over this handout and answer questions at this time. SEE REQUESTS OF THE CLIENTS HANDOUT
Computation	60 min.	Allow students to figure out how all of the rooms are going to fit into the square footage. Remind them to show their work and label their answers.
Internet Plans	30 min.	Allow students to research professional plans on the Internet. This will give them thousands of ideas to work with.
Rough Draft	30-60 min.	

The Drawing	60 min.	Using the grid paper provided, draw a rough draft. Once the computations are complete, the students will draw out the floor plan on Microsoft Word Draw. This drawing needs to be to scale. SEE TECHNOLOGY CHECKLIST
The Labeling Presentations	30 min. 60 min.	Once it is drawn, they need to label the drawing and print. They will present them to the class as if they were presenting them to the potential buyers. Part of the assessment will be based on the presentation.

Lesson Assessment Strategy (Formative – As the lesson progresses)

Preparation, Presentation and Overall Implementation (Instructor)

- Is the example useful?
- Are the guidelines too much/ not enough?
- Do the students need to know more about area and perimeter before they start?
- Is there too much time given or not enough time given for any phase of the project?
- Is the rubric useful in assessing the students' learning?

Performance and Practice (Student)

- Are the handouts enough or do they need more guidance?
- Are the checklists useful or do they need more?
- Do they need more practice with presentations?
- Do they need more practice with Word Draw?
- Does this help them understand the concepts of area and perimeter better than they did before?

Technology

- Is the technology helpful?
- Will more website support be useful?
- Are the websites used useful?
- Is there a simpler program for students to use for this lesson?

Handouts

REQUESTS OF THE CLIENTS

Rooms that we want...

- Kitchen
- Living Room
- Dining Area
- Laundry Room
- Master Bedroom with bathroom
- Two Bedrooms
- Study/ Office Area
- Two more bathrooms
- Hall Closet
- Garage

We do not care how these rooms are ordered but it should be in some logical order. The square footage must not exceed 1500 square feet. We would also like to know the perimeter of the floor plan.

Activity Checklist

	Calculate the area that you will use in each room. You must include dimensions and show your work. Remember to label your answers.
	Draw a rough draft of your floor plan using the grid paper provided.
	Using Microsoft Word Draw, draw your floor plan based on your rough draft.
	Label the rooms. Record dimensions of the rooms and area of each room. Remember to label your square footages and dimensions.
	Print your plans.
	Present your plans to the class. Remember they are your clients so be professional.

Technology Checklist

	Open Microsoft Word.
	Open Drawing functions.
	Select line tool.
	Use this to draw in the walls of your floor plan.
	Click on "Insert" and "Text Box" for room titles and dimensions of the room.
	Remember to check with the teacher before you print anything.

Lesson Rubric

Category	0-1 points	2-3 points	4-5 points	6-7 points	8-10 points
Calculations	No calculations, dimensions, areas or perimeters.	Area and perimeter used. No calculations, labeling of answers or dimensions.	Correct area, perimeter and dimensions. No labeling of answers or calculations.	Correct area, perimeter and dimensions. Calculations shown. Labels missing.	Correct area, perimeter, dimensions and calculations. Few if any labeling errors.
Drawings	No computer or rough draft drawings provided.	Rough draft drawing provided (not to scale).	Computer Drawing provided (not to scale)	Computer Drawing provided to scale. Missing labels and or dimensions.	Computer Drawing provided to scale with few if any labeling or dimension errors.
Presentation	No presentation.	Presentation unorganized and/or unprofessional.	Presentation professional but still unorganized (some elements missing).	Presentation organized and professional. Some mistakes made.	Presentation professional and organized. Few mistakes. Creatively presented.