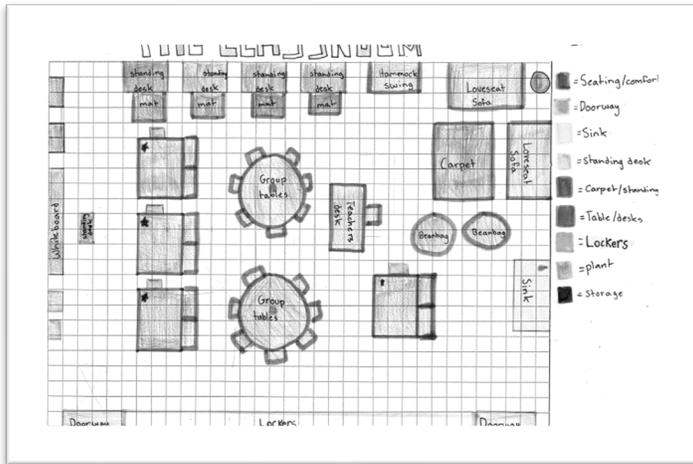


GRADE 6 MATH AND ADST: Engaging Classrooms

Summary of Learning Opportunity		
<p><i>How does the classroom environment affect student learning?</i> Students designed their perfect classroom space within a limited budget by researching theories of student engagement in a classroom environment and connecting with their past experiences of learning in a classroom. They created 2D and 3D classroom floorplans of spaces that supported student engagement and showed their budget and calculations. Students defended their design decisions through a persuasive essay.</p>		
Curricular Competencies and Content	Math 6	<ul style="list-style-type: none"> • Model mathematics in contextualized experiences • Represent mathematical ideas in concrete and pictorial ways • Connect math concepts to areas of personal interest • Use mathematical arguments to support personal choices • Perimeter of complex shapes • Financial literacy—simple budgeting and consumer math
	ADST 6	<ul style="list-style-type: none"> • Evaluate personal, social, and environmental impacts • Evaluate their product against their criteria and explain how it contributes to the community

Literacy and Numeracy Connections	Instruction and Assessment	Competencies Developed, Practiced, and/or Assessed
LITERACY: Applies understanding—Curates text, Extracts ideas and information NUMERACY: Interprets—Understands the real-world problem, Identifies parameters and limitations	1. Research about improving student engagement using classroom design such as by using flexible seating. Discuss design requirements: budget, classroom space constraints.	Model mathematics in contextualized experiences, Connect math concepts to areas of personal interest, Evaluate personal, social, and environmental impacts
NUMERACY: Solves—Solves the mathematical problem NUMERACY: Analyzes—Reflects on the reasonableness of the solution in context	2. Create an accurately scaled floor plan. All design elements must support student engagement, be accurately scaled, and within the budget.	Represent mathematical ideas in concrete and pictorial ways
NUMERACY: Applies—Represents the mathematical problem (visualization)	3. Design a 3D visual floorplan using an app.	Represent mathematical ideas in concrete and pictorial ways
LITERACY: Develops Ideas--Generates ideas, Evaluates ideas, Refines ideas NUMERACY: Communicates—Defends decisions and assumptions	4. Discuss design decisions with reference to purpose, space, and budget. Plan, write, and revise a persuasive essay.	Use mathematical arguments to support personal choices Evaluate their product against their criteria and explain how it contributes to the community

Proficient Student Work Samples



Item	Cost	Amount	\$20,000.00 Budget
Foot rest	\$279.90	16	\$17,806.22 Money spent
Shelf	\$101.86	2	\$2,193.78 Money left
Couch	\$25.80	1	\$2,136.75 Tax
Hanging chair	\$274.62	1	\$57.03 Money left after tax
Desk and chair	\$2,909.01	12	\$19,942.97 Money spent after tax
Rug	\$22.90	1	
Plant	\$0.10	10	
Fridge	\$175.46	1	
Standing desk	\$1,734.00	6	
Printer	\$99.99	1	
Spider plant	\$146.86	7	
Lockers	\$4,229.25	15	
Air freshener	\$27.45	5	
Deck	\$7,725.00	1	
Picture 1	\$13.59	1	
Picture 2	\$7.20	1	
Teachers desk	\$33.23	1	

Teacher's Observations and Assessment

Proficient: The student presented a classroom design arrangement which fit the spatial and financial parameters and constraints. The student demonstrated an understanding of scale, used arithmetic and various tools in order to create a model, and presented a possible solution to the design prompt. Their budget showed evidence of their research into furniture cost. In the persuasive essay, the student defended their choice of design elements by referencing their research about the evolution of educational design and made connections to their own classroom. They also discussed their reasoning for allocating the budget.

Key Considerations

This task could be further connected to other learning areas by emphasizing key elements for instruction and assessment:

- Develop a plan of action to accurately determine the scale (Numeracy)
- Show sample scale and budget calculations (Math)
- Engage in a peer-review process to refine essay (ELA)
- Emphasize self-advocacy, self-regulation, well-being, and valuing diversity in researching, choosing, and defending design choices for the classroom space (Personal and Social Responsibility Core Competency)

seating arrangements while designing. Different students feel they have different ways of achieving the best learning success they can. Two large group tables are placed in the core of the classroom, for students who's attentive listening skills are balanced while working in a collaborative learning environment. While students who work best independently have a specific workspace they may use. Results of a Beta study showed that designs supporting an active learning environment increased student engagement over traditional row seating. (steelcase.com)