

Ontario Skills Passport (OSP)

Resource for Grade 7 *Mathematics*



<http://skills.edu.gov.on.ca>

Essential Skills are used in virtually all occupations and throughout daily life.

Essential Skills demonstrated in these activities:

- ✓ Reading
- ✓ Writing
- ✓ Use of documents
- ✓ Use of computers
(*optional*)
- ✓ Money math
- ✓ Scheduling or budgeting and accounting
- ✓ Measurement and calculation
- ✓ Numerical estimation
- ✓ Job task planning
- ✓ Problem solving
- ✓ Decision making
- ✓ Finding information

In this series of activities, students will ...

- investigate how people working in home renovation and construction trades use Essential Skills;
- use their own Essential Skills to draw floor plans; and
- work with peers to decorate a room.

"Decorating 101"

Writer

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Ontario Curriculum Connections Grade 7 - Mathematics

Specific Expectations - Number Sense and Numeration

- solve problems involving the calculation of unit rates

Specific Expectations - Measurement

- research and report on real-life applications of area measurements (e.g. building a skateboard; painting a room)

In any given classroom, students may demonstrate a wide range of learning styles and needs. Teachers plan programs that recognize this diversity and give students tasks that respect their particular abilities so that all students can derive the greatest benefits possible from the teaching and learning process. Options for planning programs for exceptional students include: no accommodations (i.e. individualized teaching and assessment strategies), human supports, and/or individualized equipment); or accommodations only; or modified curriculum expectations, with the possibility of accommodations. Some students may need an alternative program or courses. For detailed information about planning programs for exceptional students, please visit the Special Education section of the Ontario Ministry of Education website at <http://www.edu.gov.on.ca/eng/teachers/speced.html>. Another resource for accommodations is *The Special Education Companion*. Go to <http://www.ocup.org>, and then click on: Resources; Teacher Companions; and Special Education Companion.

Teaching Notes - Lesson 1


Investigating How Essential Skills are Demonstrated in the Workplace

1. Use the “**Essential Skills – Focusing on Numeracy**” and “**How do people use their numeracy skills at work?**” handouts to introduce/review Essential Skills.

2. Ask students to identify what the occupations in the “**How do people use their numeracy skills at work?**” handout have in common (*They are home renovation or skilled trades types of occupations*).

3. Choose one of the occupations from the handout (i.e. Painters and Decorators”) and ask students to brainstorm how workers in this occupation use their Essential Skills. You can continue to focus on numeracy skills or you can expand the discussion to include all the Essential Skills listed on the first handout.

Note: You can print an occupational profile for “Painters and Decorators” or any of the other occupations listed on the handout. This will provide you with great examples of how workers demonstrate their Essential Skills. *See instructions on the left.*

 Idea: Home renovations or construction trade types of occupations were chosen because they relate to the next two lessons; however, you may want to look at the list of occupations and choose other occupations that may be of interest to your students.

4. Explain that students will get a chance to demonstrate some of these tasks themselves in the next class.

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Activity Summary

Students explore how Essential Skills are used in home renovation and construction trades

Materials Required











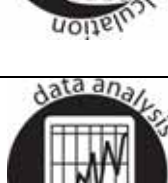



- copies of the “Essential Skills – Focusing on Numeracy” and “How do people use their numeracy skills at work?” handouts for each student or pair of students
- chart paper
- copies of the occupation profile for *Painters and Decorators – NOC 7294* and any other related occupations you would like to discuss in class

How to print an occupational profile

1. Go to OSP web site at <http://skills.edu.gov.on.ca>
2. Click on “**Occupations and Tasks in the OSP Database**”.
3. Click on “**Sorted by NOC**” or “**Sorted by title**”.
4. Scroll through list until you find your occupation and then click on the “**Sample Workplace Tasks**” button beside the occupation.
5. Click on “**Print Occupational Profile**” in upper right hand corner.

Essential Skills – Focusing on Numeracy

1. Circle the five numeracy (math) skills in the chart below.
2. Match the definition with the skill title (see chart at bottom).
3. Think of examples of how you have used numeracy skills at home, at school, or in the community. Share your examples with the class.

		
		
	Essential Skills are used in virtually all occupations and throughout daily life.	
		
		

Match the definition with the numeracy skill title.






Numeracy Skill Definition	Title of Numeracy Skill
The use of mathematical skills in making financial transactions, such as handling cash, preparing bills, and making payments.	
The measurement and calculation of quantities, areas, volumes, and/or distances.	
Planning for the best use of time and money, as well as monitoring of the use of time and money.	
The collection and analysis of data in numerical form.	
The production of estimates in numerical terms.	

How do people use their numeracy skills at work?






Circle the numeracy skill associated with each task.

1. Estimate the amount of paint or stain needed to complete a job.






(Painters and Decorators - NOC 7294)

				
Money Math	Scheduling or Budgeting and Accounting	Measurement and Calculation	Data Analysis	Numerical Estimation

2. Calculate averages across sets of readings on the energy consumption to compare different systems. (Refrigeration and Air Conditioning Mechanics – NOC 7313)






				
Money Math	Scheduling or Budgeting and Accounting	Measurement and Calculation	Data Analysis	Numerical Estimation

3. Ensure that electrical installations meet electrical code requirements by taking measurements and performing calculations. (Construction Electricians– NOC 7241)






				
Money Math	Scheduling or Budgeting and Accounting	Measurement and Calculation	Data Analysis	Numerical Estimation

4. Approve payment of bills which include calculation of a quantity of product charged at a unit rate, discount and taxes.


(Residential Home Builders and Renovators – NOC 0712)

				
Money Math	Scheduling or Budgeting and Accounting	Measurement and Calculation	Data Analysis	Numerical Estimation

5. Order parts or materials, seeking the best price. (Construction Trades Helpers – NOC 7611)

				
Money Math	Scheduling or Budgeting and Accounting	Measurement and Calculation	Data Analysis	Numerical Estimation

Teaching Notes – Lesson Two Drawing a Floor Plan or Net

<ol style="list-style-type: none">1. Review three dimensional shapes and properties.2. Using textbooks and Internet resources, teach students about nets of three-dimensional shapes and units of measurements.3. Explain how the properties of geometric shapes can be used to draw nets and floor plans. Discuss the features of a floor plan and provide samples.4. Ask students to imagine that they are walking from their classroom to the school gymnasium (or another room in the school) and have them to draw a floor plan from memory. Ask them to estimate the dimensions of the room. <i>(Note to teachers: You will need to take these measurements ahead of time!)</i>5. If possible, have students go to the room and measure the length and width of the room to see how close they were in their numerical estimations or the teacher could produce a floor plan ahead of time and share information on the overhead or chart paper.6. Ask students which Essential Skills they demonstrated as they completed the activities <i>(Use of documents, Measurement and calculation, Numerical estimation)</i>.7. For homework, students can draw a floor plan of a room in their home or they can design a “dream room” and describe how they demonstrated their Essential Skills to complete the activity.	<p style="text-align: center;">“Decorating 101” Ontario Skills Passport (OSP) Resource for Grade 7 Mathematics</p> <p style="text-align: center;"> http://skills.edu.gov.on.ca</p> <div style="border: 1px solid black; padding: 5px; text-align: center;"><p>Activity Summary Students will draw floor plans and nets using information from their textbooks and other sources.</p></div> <p>Prior Knowledge</p> <ul style="list-style-type: none">• understanding of basic three dimensional shapes• understanding of area and perimeter and scales and ratios <p>Materials Required</p> <ul style="list-style-type: none">• sample floor plans (i.e. the school gymnasium, brochures from home renovating stores or the Internet)• measuring tapes• chart paper or graph paper <p>Essential Skills Demonstrated</p> <ul style="list-style-type: none">• Use of documents• Numerical estimation• Measurement and calculation
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Teaching Notes - Culminating Activity (2 lessons)

Designing a Room

1. Divide students into working groups.
2. Handout and review the “Decorating a Room” chart and presentation rubric.
3. Discuss how students can work effectively together to complete the assignment. Elicit ideas on what they can do if there are disagreements. For example, what should they do if they can’t agree on whether to decorate a bedroom or a family room or maybe they don’t like their partner’s choice of paint? You may want to write the “Problem Solving Model” shown below and work through some examples with the students.

Problem-Solving Model

1. Define the problem or situation.
What is the problem?
2. Look at all sides.
What does each side want to happen?
3. List 2 possible solutions.
How can this problem be resolved?
Think about how both parties can be happy.
4. Pick the best solution to the problem.
What are the positive and negative consequences for each?
5. Implement your solution.
6. Evaluate your decision.
What happened after you implemented your solution?

4. Explain that students will need to hand in their “Decorating a Room” chart at the end of class for feedback. Students will get a chance to review the feedback next class before their presentations.

Assessment Tools

Decorating a Room (chart)	Formative
Decorating a Room Presentation (rubric)	Summative

“Decorating 101”

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Activity Summary

Students will use home improvement books to determine the cost of painting and decorating a room.

Prior Knowledge

- understanding of Essential Skills
- how to draw floor plans

Materials Required

- copies of “Decorating a Room” chart and rubric for each group
- brochures, catalogues and/or flyers from home improvement stores with costs of paint, floor coverings, etc.
- chart paper, glue and markers
- book the computer room so students can search for items online (*optional*)

Essential Skills Demonstrated

- Use of documents
- Use of computers (*optional*)
- Money math
- Scheduling or budgeting and accounting
- Problem solving
- Decision making
- Finding information

Decorating a Room

Congratulations! You have been chosen to appear in a television design competition and have been given **\$2000** to decorate a **bedroom or a family room**. It can be a room in your home or a room of your own design.

1. Provide a **hand drawn floor plan** of the room. Be sure it is neatly drawn and shows the dimensions of the room.
2. Determine the cost of painting the room, assuming that you will need **two coats of paint**.
3. Now you can use your imagination and design expertise to finish decorating the room. You must keep within the budget and be prepared to explain why you chose each item. You will have an opportunity to present your ideas.
4. Chart paper has been provided so you can show the furniture layout and cut out pictures of the items you have chosen.

Your presentation will include the following:

- an overview of your decorating ideas and why you chose specific items;
- an explanation of each calculation (you are welcome to use the board or chart paper to show the class);
- specific examples of how you demonstrated your Essential Skills as you completed this activity; and
- why you think you should win the decorating contest.

Item	Name of the store (where the item will be purchased)	Area to Cover (if applicable)	Unit Cost	Tax	TOTAL	Why was this item chosen?
Paint						

TOTAL COST: _____

Decorating a Room Presentation

Group Members: _____

Ontario Curriculum Expectations – Grade 8 Mathematics

Number Sense and Numeration

- solve problems involving the calculation of unit rates

Measurement

- research and report on real-life applications of area measurements (e.g. building a skateboard; painting a room)

Knowledge/Skills	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding	The students:			
• understanding of mathematical concepts	-demonstrated limited understanding of mathematical concepts	-demonstrated some understanding of mathematical concepts	-demonstrated considerable understanding of mathematical concepts	-demonstrated a thorough understanding of mathematical concepts
• understanding of how Essential Skills were demonstrated during activity	-demonstrated limited understanding of Essential Skills	-demonstrated some understanding of Essential Skills	-demonstrated considerable understanding of Essential Skills	-demonstrated a thorough understanding of Essential Skills
Thinking	The students:			
• use of job task planning, problem solving and critical thinking skills to produce a reasonable yet creative decorating plan	-used critical thinking/creative skills with limited effectiveness	-used critical thinking/creative skills with some effectiveness	-used critical thinking/creative skills with considerable effectiveness	-used critical thinking/creative skills with a high degree of effectiveness
Communication	The student(s):			
• description of the decorating plan and decisions	- rarely communicated plan and decisions with clarity and precision	-sometimes communicated plan and decisions with clarity and precision	-usually communicated plan and decisions with clarity and precision	-consistently communicated plan and decisions with clarity and precision
Application	The student(s):			
• application of measurement techniques and formulae to solve problems	- applied measurement techniques and formulae with many errors and/or omissions	- applied measurement techniques and formulae with some errors and/or omissions	- applied measurement techniques and formulae with few errors and/or omissions	- applied measurement techniques and formulae with few, if any, minor errors and/or omissions

Note: A student whose achievement is below Level 1 (50%) has not met the expectations for this assignment or activity.

