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| About this Lesson |
| In this lesson, students calculate the amount and cost for duct tape needed to make duct tape wallets. (This lesson is used along with the Art Lesson, Duct Tape Wallet). |

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| **Grade Level** | **Course(s)/subject(s)** | **Learning Goal(s)** | **Suggested****Timing** |
| 4 | Mathematics | At the end of this lesson, students will:* develop vocabulary related to money (e.g., bills, currency, coins)
 | 40–50 minutes |

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| Curriculum Links |
| Mathematics, grades 1–8 (2005)Number Sense and Numeration* read, represent, compare and order whole numbers to 10000, decimal numbers to tenths, … and represent money amounts to $100
* solve problems involving the addition, subtraction, multiplication and division of single- and multi-digit whole numbers, and involving the addition and subtraction of decimal numbers to tenths and money amounts, using a variety of strategies

Measurement* estimate, measure and record length, perimeter, area, etc. using a variety of strategies
* determine the relationships among units and measurable attributes, including the area and perimeter of rectangles
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| Inquiry Question |
| How do I use my wallet to help me budget and save money? |

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| Materials List |
| * Calculating Lengths and Costs Worksheet (Appendix A)
* Optional: calculator
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| **Timing**(Mins.) | **Lesson Sequence** | **Assessment for and as Learning Opportunities** (self/peer/teacher) |
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| MINDS ON |
| 5-10 minutes | WHOLE CLASSStudents have their wallets from the recent art activity, duct tape wallet, on their desks.Lead a discussion about the materials and procedures that students used to create their wallets. | Assessment FOR Learning (Teacher) |
|  | Context for Learning**Note:** Students should have participated in Duct Tape Wallet – Art activity beforehand.<https://www.inspirefinanciallearning.ca/index.php/teachers/teaching/by-grades/grade-4/duct-tape-wallet-art-edition/>Students should know how to measure using a metric ruler. |  |
| ACTION |
| 20–30 minutes | WHOLE CLASS**Problem solving** Provide students with this problem: A teacher in another class wants to do this duct tape wallet activity. She needs to know how much it will cost and what she needs to purchase or have on hand.  | Assessment AS Learning (Peer) |
|  | As a large group, have students brainstorm a list of materials needed to replicate the duct tape wallet activity. Introduce the concept of estimation and provide examples of how to round to whole numbers. Have students discuss both the benefits and disadvantages of rounding. Review concepts of measurement, especially converting from mm to cm to m. Distribute worksheet and provide students with enough time to complete the cost estimates. | Assessment FOR Learning (Teacher) |

| **Timing**(Mins.) | **Lesson Sequence** | **Assessment for and as Learning Opportunities** (self/peer/teacher) |
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| CONSOLIDATION/DEBRIEF |
| 10–15 minutes | SMALL GROUPSIn table groups, have students compare their responses. Have students submit their worksheets for assessment. (Appendix B – Rubric) | Assessment AS Learning (Teacher – Use Appendix B – Rubric) |
|  | Ask critical questions to engage students in further reflection and understanding of the concepts. Students may also respond to the last question in their math journal: 1. Why are some measurements in cm and some in m?
2. The label on the duct tape says that the roll is 20 yards or 18 m long. Why are there two measurements? What do we know about the term “yards”? (Explain to students – In North America, we use metric measurements, but there are other parts of the world that use imperial measurements. A yard is an imperial measurement. If the duct tape is sold in different countries, then the manufacturer will put different types of measurements on the label.)
3. If faced with an unfamiliar measurement, such as one yard, how can you go about figuring out what it means?
4. How is math useful in helping us solve problems?
 | Assessment AS Learning (Peer, Self) |

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| Calculating lengths and costs |
| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_To create one wallet, how many centimetres of duct tape do you need?

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| Materials to make one wallet | Length of duct tape needed (cm) |
| 10 strips of duct tape 18 cm long |  |
| 3 strips of duct tape 15 cm long |  |
| TOTAL NEEDED FOR ONE WALLET |  |

If one roll of duct tape is 18 m long and costs $5.99:1. How many metres of duct tape are needed in order for each member of the class to make one wallet? Show your work in both metres and centimetres. You may round to whole numbers.
2. How many rolls of duct tape does the class need to ensure that 20 students can make wallets? You may round to whole numbers.
3. How much will it cost to buy enough duct tape for the class? You may round to whole numbers.
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**APPENDIX A**

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| Rubric |
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| Criteria | Level 1 | Level 2 | Level 3 | Level 4 |
| Knowledge | Demonstrates limited knowledge of money-related and measurement vocabulary. | Demonstrates some understanding of money-related and measurement vocabulary. | Demonstrates considerable knowledge of money-related and measurement vocabulary. | Demonstrates a high degree of knowledge of money-related and measurement vocabulary. |
| Thinking | Uses problem-solving skills with limited effectiveness.  | Uses problem-solving skills with some effectiveness.  | Uses problem-solving skills with considerable effectiveness.  | Uses problem-solving skills with a high degree of effectiveness.  |
| Communication | Expresses and organizes ideas with limited effectiveness. | Expresses and organizes ideas with some effectiveness. | Expresses and organizes ideas with considerable effectiveness. | Expresses and organizes ideas with a high degree of effectiveness. |
| Application  | Makes connections between ideas, process and design with limited effectiveness. | Shows connections between ideas, process and design with some effectiveness. | Makes many connections between ideas, process and design with considerable effectiveness.  | Makes connections between ideas, process and design with a high degree of effectiveness.  |

Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Mark: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Parent initials: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**APPENDIX B**