

Title: Calculating Body Mass Index (BMI)

Objectives To obtain an understanding of Body Mass Index (BMI) as a tool for calculating a more accurate assessment of total fitness and overall health.										Time frame to Complete 45 minutes													
										NRS EFL 4													
Stackable Cert.	Documentation	Technology	Study / Life skills	EL-Civics	Career Pathways	Police	Paramedic	Fire Rescue	Medical Asst.	EKG / Cardio	Phlebotomy	Practical Nursing	Healthcare Admin	Pharmacy Tech	IMT	AMT	HVAC	Welding	Other:	STNA	Exercise Science	Nutrition & Dietetics	
			X						X	X		X	X							X			
Standard(s) Addressed in Lesson Use Math to Solve Problems and Communicate																							
Benchmark(s) Addressed in Lesson M.4.3 Apply order of operations to simplify expressions and perform computations M.4.4 Compare and order equivalent forms of commonly used fractions, decimals and percents. M.4.16 Evaluate and simplify algebraic expressions and solve equations. M.4.19 Solve linear equations with one unknown graphically and algebraically.																							
Materials Handouts – BMI overview, <i>Calculating BMI worksheet</i> Calculator Pencils Paper																							
Learner Prior Knowledge Multiplication facts, division skills																							
Activities <u>Step 1</u> Teacher distributes BMI overview handout and explains BMI – what it is, how it is used, and how it is calculated. <u>Step 2</u> Teacher shows students how to find second power on the calculator. Then, teacher models a sample calculation on the board and using the calculator to insure student understanding. (Jane weighs 140 lbs and is 5'3" tall. BMI = approximately 24.8) <u>Step 3</u> Teacher distributes worksheet, and students complete individually. After completion, go over results as a class. <u>Step 4</u> Teacher provides remediation to students as needed.																							
Assessment/Evidence Completed BMI worksheet																							
Adaptations for Beginning Students Provide individual assistance to students.																							

Adaptations for Advanced Students

Advanced students may research BMI further online. Information is available at U.S. Department of Health and Human Services (www.nhlbi.gov/health)

Teacher Reflection/Lesson Evaluation

This lesson was created by Middletown ABLE.

Body Mass Index (BMI)

Body Mass Index is a better approximation of how much weight is fat than a scale. (BMI) is obtained by multiplying 705 by weight in pounds, then dividing by height in inches squared.

$$(BMI) = \frac{705(W)}{H^2}$$

The higher your BMI, the greater your risk for specific diseases such as lung problems, heart disease, cancer, diabetes, hypertension, and digestive problems. Your BMI score results in the following assessment:

<u>UNDERWEIGHT</u>	<u>BELOW 18.5</u>
<u>NORMAL</u>	<u>18.5-24.9</u>
<u>OVERWEIGHT</u>	<u>25.0-29.9</u>
<u>OBESITY</u>	<u>30.0 and ABOVE</u>

There are some limitations that should be noted when calculating your BMI.

- **If you are an athlete it may overestimate your body fat.**
- **If you are older and have a decrease in muscle tone it may underestimate body fat.**

1. You work as a licensed practical nurse and monitor the weight loss of patients in a health clinic. You use BMI as a tool for measuring successful results. One patient started with a BMI of 27.5 and now has a BMI of 24. How much has his BMI decreased?
2. What category on the BMI table has the patient in question 1 now moved to?
3. As the new YMCA fitness coach you help people reach their health goals. If Joe's weight is 180 lbs. and his height is 5 ft. 10 in., what is his BMI?
4. According to the table, what is his health category?
5. Calculate your own BMI. What health level are you? Are you satisfied with your results? You do not have to show your results.
6. Name some ways people can lower their BMI and reduce their body fat.
7. Mary is 90 years old and sedentary. Tim is 17 years old and letters in three sports: soccer, swimming and hockey. Are the BMI's of these two individuals necessarily accurate? Why or why not?

ANSWER KEY

1. 3.5
2. Normal
3. 25.89 or 25.9
4. Overweight
5. Student may choose not to respond.
6. Answers may vary.
7. No, BMI is sometimes not accurate in athletes and the elderly depending on muscle tone.