Amazing Fetal Growth

6971

INTRODUCTION

How fast does a human fetus grow? The data below are the average masses, at various stages of development, of a human fetus.

Weeks of development	Fetal mass in grams
12	28
16	88
20	256
24	510
28	907
36	2,665
40	3,204

Activity Overview

In this activity we will

- graph data of human fetal growth
- describe the rate of human fetal growth

Approximate Total Time: 10 minutes

Science Objective

Students represent the typical growth rate of a human fetus as a graph and make predictions about human growth based on the graph.

PROCEDURE

1

Turn on your calculator. Press [STAT], [ENTER] to go to the List Editor.

2

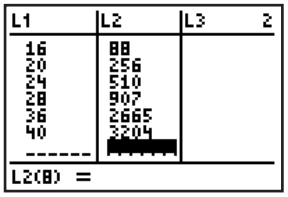
Clear any data from the List Editor by using the arrow keys to move the cursor to the top of each column and pressing [CLEAR], [ENTER].

3

Enter the data for weeks of development, from the first column in the table, into list L1. To do this, move the cursor to the first row of the column (this will be indicated at the bottom of the screen by "L1(1)="). Then enter the number 12. Press [ENTER] to move the cursor to the next row, and enter the number 16. Continue this process for the rest of the numbers in the column.

4

Use the same process to enter the data for fetal mass, from the second column in the table, into L2.



Amazing Fetal Growth

5

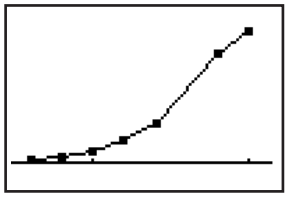
Graph your data:

a) Press [APPS] and scroll to SCI TOOLS. Press [ENTER], [ENTER], and [3] to get to the Data/Graphs Wizard.

b) Press [WINDOW] to select PLOT DATA.

c) Press [WINDOW] to select LINE GRAPH.

d) Highlight L1 and press [ENTER]. This identifies your independent variable as weeks of development, which will appear on the *x*-axis. Highlight L2 and press [ENTER]. This sets fetal mass as your dependent variable, which will appear on the *y*-axis.



e) Press [TRACE] to place your cursor on the line graph. Use the [◀] and [▶] keys to move across the graph. Note the values for *x* and *y* at the bottom of the screen.

DATA ANALYSIS

1. Describe fetal growth, in terms of mass and time, as it is shown on your graph.
2. Is the mass increase linear or exponential? How do you know?
3. According to the graph, what would be the mass of a baby born at 38 weeks? At 26 weeks?
4. If the mass of a woman is 64 kg and she delivers a baby of average mass at 40 weeks of gestation, what percentage of the mother's mass is the baby's?

TI-NAVIGATOR™ SYSTEM EXTENSION

For classrooms equipped with TI-Navigator™ System, student progress can be monitored using Screen Capture. After procedure step 5e, capture the line graphs and assess levels of understanding as well as whether students are on task. Speed up this lab with the TI-Navigator™ System's sending files function. Complete lists L1 and L2 before class and send them directly to students' calculators. See **Appendix C** for details on using Screen Capture and sending files.