Lesson plan:
How fast do humans run?

6-8th, 11-13 years | 90 min.
Standards: NGSS, ISTE, CC Math, and Physical Education, Life Science, Math, PE

This document is a companion to the student activity guide **How fast do humans run?**

In this lesson, students learn how to create and edit charts in Excel to answer the question How fast do humans run? The lesson teaches math and data science skills by leveraging Excel's powerful charting tool to answer a question that spans human physiology and animal biology in an engaging sequence of activities.

Student Activities

- Using a bar chart, students compare the running speeds of the land animals
- Discussion on how human running speed changes with time
- Step-by-step process that teaches how to create Excel charts
- Use trendlines to study the progression of human running speed with age
- Race against land animals and future self

Watch the overview video to learn more about this activity.

Learning Objectives

The lesson meets these learning objectives:

- Understand how data is visualized using charts
- Learn the key components of an Excel chart
- Analyze data to answer questions
- Make predictions by analyzing data

Skills

Students acquire the following data science skills:

- **Ask questions:** Identify questions answered by a given data set
- **Visualize:** Read and interpret data in tables and charts
- **Analyze:** Analyze charts and answer questions
- **Review:** Make predictions and check interpretations

Microsoft Hacking STEM

Materials

This self-contained lesson includes:

- Student Activity Guide
- Excel workbook with instructions and prompts to complete the activity

Teaching Tips

Consider these tips to prepare and teach this lesson:

- Try the lesson yourself before teaching it
- The lesson is appropriate for students in 5th grade (age 10) and higher
- Gather students' own running time for a 100m race during gym or physical education class

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Standards

NGSS Practices

Analyzing and Interpreting Data

Using Mathematics and Computational Thinking

Common Core Math

Analyze patterns and relationships.

CCSS.MATH.CONTENT.5.OA.B.3

Graph points on the coordinate plane to solve real-world and mathematical problems.

CCSS.MATH.CONTENT.5.G.A.1, CCSS.MATH.CONTENT.5.G.A.2

Represent and analyze quantitative relationships between dependent and independent variables.

CCSS.MATH.CONTENT.6.EE.C.9

ISTE

6c: Students communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.

5b: Students collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem-solving and decision-making.

National Physical Education Standards

Standard 1: The physically literate individual demonstrates competency in a variety of motor skills and movement patterns.