**Human Capital Line Student Activity**
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Description:
The Human Capital Line Student Activity is a simulation where students physically create and sort lines based on job options and the typical education requirements and pay for those jobs. The activity brings one of the dynamic interactives from the Invest in What's Next: Life After High School (investinwhatsnext.org) online mini-course to life in the classroom. Invest in What's Next: Life After High School is an online mini-course developed by the Federal Reserve Banks of Richmond and San Francisco to help students navigate their first major financial decision: what path to pursue after high school. During the Human Capital Line Student Activity students will be actively engaged and moving around the classroom, and the activity will end with a robust discussion looking at the relationship between education and income.

National Standards:
CEE Voluntary National Content Standards in Economics
- Content Standard 1: Scarcity.
  - Benchmark 4; Grade 8.
  - Benchmark 1; Grade 12.
- Content Standard 13: Income.
  - Benchmark 3, 4, 5; Grade 8.

CEE National Standards for Financial Literacy
- Content Standard 1: Earning Income.
  - Benchmark 1, 2, 3, 4, 5, 6; Grade 8.
  - Benchmark 1, 2, 3, 4; Grade 12.

*For the full text of the national standards and benchmarks see Appendix A.*

Grade:
8-12

Concepts:
Income
Human Capital
Labor
Cost and Benefit

Objectives:
Students will be able to:
- Describe the general relationship between educational attainment and income.
- Identify factors that explain why some jobs do not follow the relationship.

Essential Question:
What is the relationship between education and income?

Time Required:
30 minutes

Materials:

- 16 Job Cards
- Education Level Signs
- Dollar Symbol Signs
- Tape or other adhesive
- Visual 1: Slide 1 - Human Capital Line Sort
- Visual 2: Slide 2 - Post-Secondary Education Level Descriptions
- Visual 3: Slide 3 - Education Line Sort
- Visual 4: Slide 4 - Income Line Sort
- Visual 5: Slide 5 - Invest in What's Next Scatterplot #1
- Visual 6: Slide 6 - Invest in What's Next Scatterplot #2
- Visual 7: Slide 7 - Invest in What's Next Scatterplot #3

Preparation:

- Briefly review the BLS Occupational Outlook Handbook page for each job on Visual 1: Slide 1 - Human Capital Line Sort
- Prepare copies of Job Cards
- Prepare copies of Education Level and Dollar Symbol Signs
- Affix the Education Level and Dollar Symbol Signs to a wall

Procedure:

1. Ask the students to think about the kinds of jobs they want after they've finished their education. Select several students and ask them to share their desired future job with the class.
2. Using these jobs as examples, ask the class what kind of education they think is required to get these jobs (Do not correct any misconceptions or errors concerning the educational requirements of the jobs stated by the students).
3. Tell the class to again think about their desired future job. Then, ask the students to raise their hand if they have an idea of how much income that job provides. Give the students time to raise their hands, and gauge the classes' response. Do not inquire about the specific incomes the students think they may earn. Simply thank the students and have them lower their hands.
4. At this point display Visual 1. Explain to the class that they will be participating in an activity that deals with the three concepts that were just discussed 'jobs, education and income.'
5. Display Visual 2 and review the descriptions with the whole class.
6. Select 16 student volunteers* from the class (include several of the students that provided responses during step 1) to participate in the activity and have them move to the section of the room where the Education Level and Dollar Symbol Signs are posted.
7. Pass out one Job Card to each student volunteer. Have the volunteer review the information listed on their card and then hold their card facing the class.
8. Tell the volunteers that their objective is to create a line based on the entry-level education typically required to enter their job. (Education levels range from less than a high school diploma, high school diploma, certificate, associate's degree, bachelor's degree, master's degree, to doctoral or professional degree.)
9. Begin the sorting activity by having the student volunteers think about their job and decide which of the Education Level Signs to stand under. (*Example: students who think their job requires the most education should stand under the Doctoral or Professional Degree sign.*) Once the students have sorted themselves and are standing under one of the Education Level Signs they need to space themselves out to form a single line from lowest education to highest.

10. When the line is formed, poll the rest of the class to see if they agree with how their classmates constructed the line. Have the student volunteers move to reorder the line based on input from the class.
11. Display Visual 3and share the correct order with the students. Each of the jobs are sorted onto the line and color coded by the typical entry-level of education required to enter the job.
12. Compare the line that the class formed to the actual line and discuss any jobs that the students failed to correctly place. Provide the class with insights into why an incorrectly placed job requires a particular level of education. (*Example: A Firefighter typically needs a certificate in fire science or emergency first response to become a full-time Fireperson. The certificate offers technical job-specific training such as the skills needed to respond to emergencies and to fight fires.)*
13. You can also discuss how some workers in the sorted jobs may have additional education beyond the typical entry level. (*Example: Preschool teachers typically need at least an associate's degree to work at a private school or daycare facility. A bachelor's degree is typically needed if the teacher works in a Head Start program or for a public school system.*
14. Discuss with students that the key takeaway from this slide is that different jobs require different levels of education. Getting additional education is also one way to open up more job options for themselves.
15. Next, inform the student volunteers that they will form a second line. This time, instead of the levels of education, they will form a line based on what they believe is the income earned from each job. The students will line up from the lowest pay to highest using the Dollar Symbol Signs to assist them with the process.
16. When the line is formed, poll the rest of the class to see if they agree with the line. Have the students move based on input from the rest of the class.
17. Display Visual 4 and share the correct order with the students. Compare the line that the class formed to the actual line and discuss any jobs that the students failed to correctly place. Then ask students if they were surprised by the results.
18. Discuss with the students that the key takeaway from this slide is that pay differs across occupations.
19. Thank the volunteers and have them rejoin the rest of the class.
20. Ask at least one of the students that both participated in the activity and provided responses during step 1 to remind the class what job they wanted after finishing school. Ask them to further recount what level of education the class thought was required and how much income they thought they may earn.
21. Then ask the student if their thinking about the job, required education, or income has changed due to their participation in the line sort activity.
22. Expand on this by asking the whole class to raise their hands if their thinking has changed based on the activity? Call on a few students to have them explain why they have or have not changed their minds.

Suggested Discussion and Debrief Questions:

23. Display Visual 5, take a moment to explain that scatterplots are similar to line graphs because both use horizontal and vertical axes to plot data points. The difference between the two types of graphs is that a scatterplot is a collection of data points used to show the relationship between two things. In this case, each data points shows the level of education required for a job and the pay earned in that job. When you look at a series of data points a trend or relationship may be identified. However there will likely be outliers or data points that do not follow the trend.
24. Based on Slide 5 review the highlighted jobs from the line sort activity and ask the class if they see a relationship between the levels of education and income values?
    *Answers might include: a) there's an upward sloping relationship between education and pay; b) pay is generally higher for jobs that require more education; c) there's a lot of differences in pay for jobs*

*that require the same amount of education; d) some jobs that require more education pay less than jobs that require less education.*

25. Have the students think about what the scatterplot might look like if more jobs were added to the chart. Then ask them if the pattern or trend would change or remain the same?
    *Answers might include: 1. Remain the same because a) other jobs they are familiar with may require a lot of education and pay very well; b) it seems like the jobs that require you to have more skills pay people more; c) it takes a lot of time and effort to get an education, so those jobs would have to pay more to make it worthwhile. 2. No the pattern or trend will change because a) the jobs we used in the activity are only a small sample of all the jobs available; b) some jobs pay really well and don't require any education. 3. I am not sure a) I know of someone who is a X and makes a lot of money and they only have a high school diploma; b) I need more than sixteen sample jobs to decide if the pattern or trend is true.*
26. Display Visual 6. Tell the students that the blue dots represent a wide variety of jobs in many different fields at many different education levels. Inform the students that by looking at the scatterplot they can see that the pattern of 'higher levels of education tend to be associated with higher pay' still appears to be true. Also acknowledge that there is a lot of variation in pay within each education level.
27. Display Visual 7 and ask the class what factors, other than education might explain the differences in pay between jobs with the same education level?
    *Answers might include: a) differences in the market value of what workers produce in each job; b) some jobs may require significant on-the-job training and experience beyond formal education; c) workers have different job interests; d) jobs have different working conditions (e.g., firefighters might earn higher wages compared to other jobs with similar education requirements due to the physically demanding and potentially dangerous nature of the job; e) some jobs might be concentrated in certain geographical areas.*
28. Tell the students that there are many factors that affect the supply and demand of workers for an occupation. These supply and demand conditions determine workers' pay.
29. Next, note to the students that the incomes presented in the plot represent the median pay. Ask the students what that means?
    *Answers might include: median pay values are the midpoint, which means that half of those employed in a job earn more and half earn less than the value displayed.*
30. Ask the students what factors may impact how much someone might earn within the same job or occupation?
    *Answers might include: a) different levels of education; b) job experience; c) skills; d) talents; e) geography.*
31. Remind the students that they may not earn the median pay at the beginning of their careers because entry-level salaries for most jobs are generally less than the median values displayed in the charts. However no matter what job the students may choose, their earning potential will tend to be higher if they build additional skills and knowledge through education, internships and other training opportunities.
32. Relate to the students that it is important to remember that their personal interests, desire to work in a specific field, educational goals, and long-term job plans are important factors when planning for the future. Taking these factors into account along with the potential pay of a job plays an important role in their education and job planning.
    *Example: The median pay for Veterinary Assistants is lower than Photographers, while both jobs have similar educational requirements. However, the Veterinary Assistant may have a long-term goal of becoming a Veterinarian, and this job allows them to work with animals and save for school at the same time.*

33. Have the class take a moment and reflect on the line sort activity, the discussion, and the relationship between jobs, education and income, as well as the importance of personal interests. Then ask the class how can they use this information to help them prepare for their future? *Answers might include: a) conduct research into multiple jobs and interest areas; b) talk to their parents, counselor or mentor about their job and education goals; c) take a self-assessment align their job and education planning with their interests and aptitudes.*
34. Finally, tell the class that there is another way they can prepare for their future and that is completing the online mini-course Invest in What's Next. Assign Lesson 1 to the class.

Appendix A:

Full Text of relevant National Standards:

CEE Voluntary National Content Standards in Economics

- Content Standard 1: Scarcity. Productive resources are limited. Therefore, people cannot have all the goods and services they want; as a result, they must choose some things and give up others.
    - Benchmark 4, Grade 8: The evaluation of choices and opportunity costs is subjective; such evaluations differ across individuals and societies.
    - Benchmark 1, Grade 12: Choices made by individuals, firms, or government officials are constrained by the resources to which they have access.
- Content Standard 13: Income. Income for most people is determined by the market value of the productive resources they sell. What workers earn primarily depends on the market value of what they produce.
    - Benchmark 3, Grade 8: A wage or salary is the price of labor; it usually is determined by the supply of and demand for labor.
    - Benchmark 4, Grade 8: More productive workers are likely to be of greater value to employers and earn higher wages than less productive workers.
    - Benchmark 5, Grade 8: Peoples' incomes, in part, reflect choices they have made about education, training, skill development, and careers. People with few skills are more likely to be poor.

CEE National Standards for Financial Literacy

- Content Standard 1: Earning Income. Income for most people is determined by the market value of their labor, paid as wages and salaries. People can increase their income and job opportunities by choosing to acquire more education, work experience, and job skills. The decision to undertake an activity that increases income or job opportunities is affected by the expected benefits and costs of such an activity. Income also is obtained from other sources such as interest, rents, capital gains, dividends, and profits.
    - Benchmark 1, Grade 8. Careers are based on working at jobs in the same occupation or profession for many years. Different careers require different education and training
    - Benchmark 2, Grade 8. People make many decisions over a lifetime about their education, jobs, and careers that affect their incomes and job opportunities.
    - Benchmark 3, Grade 8. Getting more education and learning new job skills can increase a person's human capital and productivity.
    - Benchmark 4, Grade 8. People with less education and fewer job skills tend to earn lower incomes than people with more education and greater job skills.
    - Benchmark 5, Grade 8. Investment in education and training generally has a positive rate of return in terms of the income that people earn over a lifetime.

Benchmark 6, Grade 8. Education, training, and development of job skills have opportunity costs in the form of time, effort, and money.

- Benchmark 1, Grade 12. People choose jobs or careers for which they are qualified based on the income they expect to earn and the benefits, such as health insurance coverage or a retirement plan, that they expect to receive.
- Benchmark 2, Grade 12. People choose jobs or careers for which they are qualified based on non-income factors, such as job satisfaction, independence, risk, family, or location.
- Benchmark 3, Grade 12. People vary in their willingness to obtain more education or training because these decisions involve incurring immediate costs to obtain possible future benefits. Discounting the future benefits of education and training may lead some people to pass up potentially high rates of return that more education and training may offer.
- Benchmark 4, Grade 12. People can make more informed education, job, or career decisions by evaluating the benefits and costs of different choices.

# Cashier

Cashiers process payments from customers purchasing goods and services.

# Photographer

Photographers use their technical expertise, creativity, and composition skills to produce and preserve images that tell a story or record an event.

# Veterinary Assistant

Veterinary Assistants typically work in clinics and animal hospitals, helping veterinarians and veterinary technologists and technicians treat injuries and illnesses of animals.

# Automotive Technician

Auto technicians inspect, maintain, and repair cars and light trucks.

# Barber/Cosmetologist

Barbers, and cosmetologists provide haircutting, hairstyling, and a range of other beauty services.

# Firefighter

Firefighters control and put out fires, and respond to emergency situations where life, property, or the environment is at risk.

# Legal Assistant

Paralegals and legal assistants do a variety of tasks to support lawyers, including maintaining and organizing files, conducting legal research, and drafting documents.

# Preschool Teacher

Preschool teachers educate and care for children younger than age 5 who have not yet entered kindergarten. They teach reading, writing, science, and other subjects in a way that young children can understand.

# Dental Hygienist

Dental hygienists clean teeth, examine patients for signs of oral diseases such as gingivitis, and provide other preventive dental care.

# Athletic Trainer

Athletic trainers specialize in preventing, diagnosing, and treating muscle and bone injuries and illnesses.

# Graphic Designer

Graphic designers create visual concepts, using computer software or by hand, to communicate ideas that inspire, inform, and captivate consumers.

# Computer Engineer

Computer hardware engineers research, design, develop, and test computer systems and components.

# Nurse

Nurses (RNs) provide and coordinate patient care, educate patients and the public about various health conditions.

# Economist

Economists study the production and distribution of resources, goods, and services by collecting and analyzing data, researching trends, and evaluating economic issues.

# Lawyer

Lawyers advise and represent individuals, businesses, and government agencies on legal issues and disputes.

# Physician

Physicians diagnose and treat injuries or illnesses, examine patients; prescribe medications; and order, perform, and interpret diagnostic tests.

# Less than a high school diploma

# High school diploma

# Certificate

# Associate's Degree

# Bachelor's Degree

# Master's Degree

# Doctoral or Professional Degree