

Count It Out!

Math Concept(s): 1:1 Correspondence, Bar Graphs

Source / Text: Handouts

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Attach the following documents:

- Lab Instructions
- Student Handout(s)
- Rubric and/or Assessment Tool

Short Description (Be sure to include where in your instruction this lab takes place):

Student will practice inventory skills (sort, count, report). Student will collect a task box with a mixed bag of shop items such as nuts, bolts, screws. Student will be given a visual schedule with simple directions: Sort, Count, Report, Questions, Clean. Each task will be next to a box indicating completion when checked. Phases of instruction are below:

- Sort: Student will open bag and sort contents into like categories.
- Count: Student will use a 1:1 Correspondence graphic organizer to Count each item
- Report: Student will report data on a bar graph by coloring in the correct number of parts present.
- Questions: 1:1 Para will ask a minimum of 3 questions like “Show me which part you have 4 of”.
- Clean: Student will clean work area and return materials to the corresponding box.

After all phases of instruction are complete, student will be prompted to take a break. After break, student will return to work center and complete the next task box.

Lab Plan

Lab Title: Count it out!

Prerequisite skills: Student will have exposure to 1:1 correspondence with whole numbers up to 5. Student will have established sorting skills based on grouping visually similar materials.

Lab objective: Student will use established sorting skills to inventory a bag of trades related parts (washers, nuts, screws, bolts), then create a bar or picture graph to represent materials from the inventory.

Standards: *(Note SPECIFIC relationship to Science, Technology, and/or Engineering)*

Mathematics K–12 Learning Standards:

- EE.1.MD.4. Organize data into categories by sorting.
- EE.2.MD.9-10. Create picture graphs from collected measurement data.
- EE.7.SP.3. Compare two sets of data within a single data display such as a picture graph, line plot, or bar graph.

Standards for Mathematical Practice:

- MP.2: Reason abstractly and quantitatively
- MP.4: Model with mathematics

K-12 Learning Standards-ELA (Reading, Writing, Speaking & Listening):

- EE.RF.K.3 Demonstrate emerging awareness of print.
 - c. With guidance and support, recognize environmental print.

K-12 Science Standards

- EE.5-PS1-3: Make observations and measurement to identify materials based on their properties.

- Target Level: Make observations and measurements to identify materials based on their properties (e.g., weight, shape, texture, buoyancy, color, or magnetism).
- Precursor Level: Classify materials by physical properties. (e.g., weight, shape, texture, buoyancy, color, or magnetism).
- Initial Level: Match materials with similar physical properties.

Leadership/21st Century Skills:

<u>21st Century Interdisciplinary themes</u> (Check those that apply to the above activity.)			
<input type="checkbox"/>	Global Awareness	<input type="checkbox"/>	
<input type="checkbox"/>	Financial/Economic/Business/Entrepreneurial Literacy	<input type="checkbox"/>	Civic Literacy
<input type="checkbox"/>	Health/Safety Literacy	<input type="checkbox"/>	Environmental Literacy
<u>21st Century Skills</u> (Check those that students will demonstrate in the above activity.)			
LEARNING AND INNOVATION	INFORMATION, MEDIA & TECHNOLOGY SKILLS	LIFE & CAREER SKILLS	Productivity and Accountability
<u>Creativity and Innovation</u>	<u>Information Literacy</u>	<u>Flexibility and Adaptability</u>	<u>Accountability</u>
<input type="checkbox"/> Think Creatively	<input checked="" type="checkbox"/> Access and Evaluate Information	<input type="checkbox"/> Adapt to Change	<input type="checkbox"/> Manage Projects
<input type="checkbox"/> Work Creatively with Others	<input checked="" type="checkbox"/> Use and manage Information	<input type="checkbox"/> Be Flexible	<input checked="" type="checkbox"/> Produce Results
<input type="checkbox"/> Implement Innovations	<u>Media Literacy</u>	<u>Initiative and Self-Direction</u>	<u>Leadership and Responsibility</u>
<u>Critical Thinking and Problem Solving</u>	<input type="checkbox"/> Analyze Media	<input type="checkbox"/> Manage Goals and Time	<u>Responsibility</u>
<input type="checkbox"/> Reason Effectively	<input type="checkbox"/> Create Media Products	<input checked="" type="checkbox"/> Work Independently	<input type="checkbox"/> Guide and Lead Others
<input type="checkbox"/> Use Systems Thinking	<u>Communications and Technology (ICT Literacy)</u>	<input type="checkbox"/> Be Self-Directed Learners	<input type="checkbox"/> Be Responsible to Others
<input type="checkbox"/> Make Judgments and Decisions	<input type="checkbox"/> Apply Technology Effectively	<u>Social and Cross-Cultural</u>	
<input checked="" type="checkbox"/> Solve Problems		<input type="checkbox"/> Interact Effectively with Others	
<u>Communication and Collaboration</u>		<input type="checkbox"/> Work Effectively in Diverse Teams	
<input type="checkbox"/> Communicate Clearly			
<input type="checkbox"/> Collaborate with Others			

<https://wa-appliedmath.org/>

Teacher Preparation: (What materials and set-up are required for this lab?)

Materials

- Visual Schedule
- Markers, Crayons or Highlighters
- Bar Graph Handout
- Bag of mixed hardware (nuts, bolts, washers)- you can add or subtract types of hardware to increase/decrease challenge level.
- Sorting Plate
- Counting Cups 1:1 Correspondence

Set-Up Required:

- Quiet Workspace for student
- Student bin clearly marked with task for the day
- Bag of hardware, Sorting Plate and Counting Cups on table.
- Add relevant words to AAC: “graph”, “bolt”, “nut”, “washer”.

Lab Organization Strategies:

Leadership (Connect to 21st Century Skills selected):

- Student will present their data to the group along with other students, working to compile a complete snapshot of available materials.
- Student will work independently, staying on task.
- Student will effectively manage information, producing results in the form of a bar graph reflecting inventory.

Cooperative Learning:

- Student will participate in whole group instruction, then work as part of the class to inventory the equipment and materials available. Student will report back to group upon completion of their independent inventory.

Expectations:

- Student participation

- Student actively working on task
- Student request breaks as needed by touching “break” on AAC or visual schedule

Timeline:

- This lab will be initiated 1:1 with impacted student by paraeducator. Student will participate in all group instruction around inventory, including use of visual organizer with sorting options.
- 45 minutes will be required to complete this lab. An additional 15 minutes will be added to supplement the time for sensory and other breaks.

Post Lab Follow-Up/Conclusions:

Discuss real world application of learning from lab

- Inventory and sorting is critical to entry level positions in manufacturing. With skill building, students can work towards entry level positions in manufacturing environments in competitive employment. Student is currently on track to work in sheltered employment, isolated from the community. These skills can lead to less restrictive employment placements.

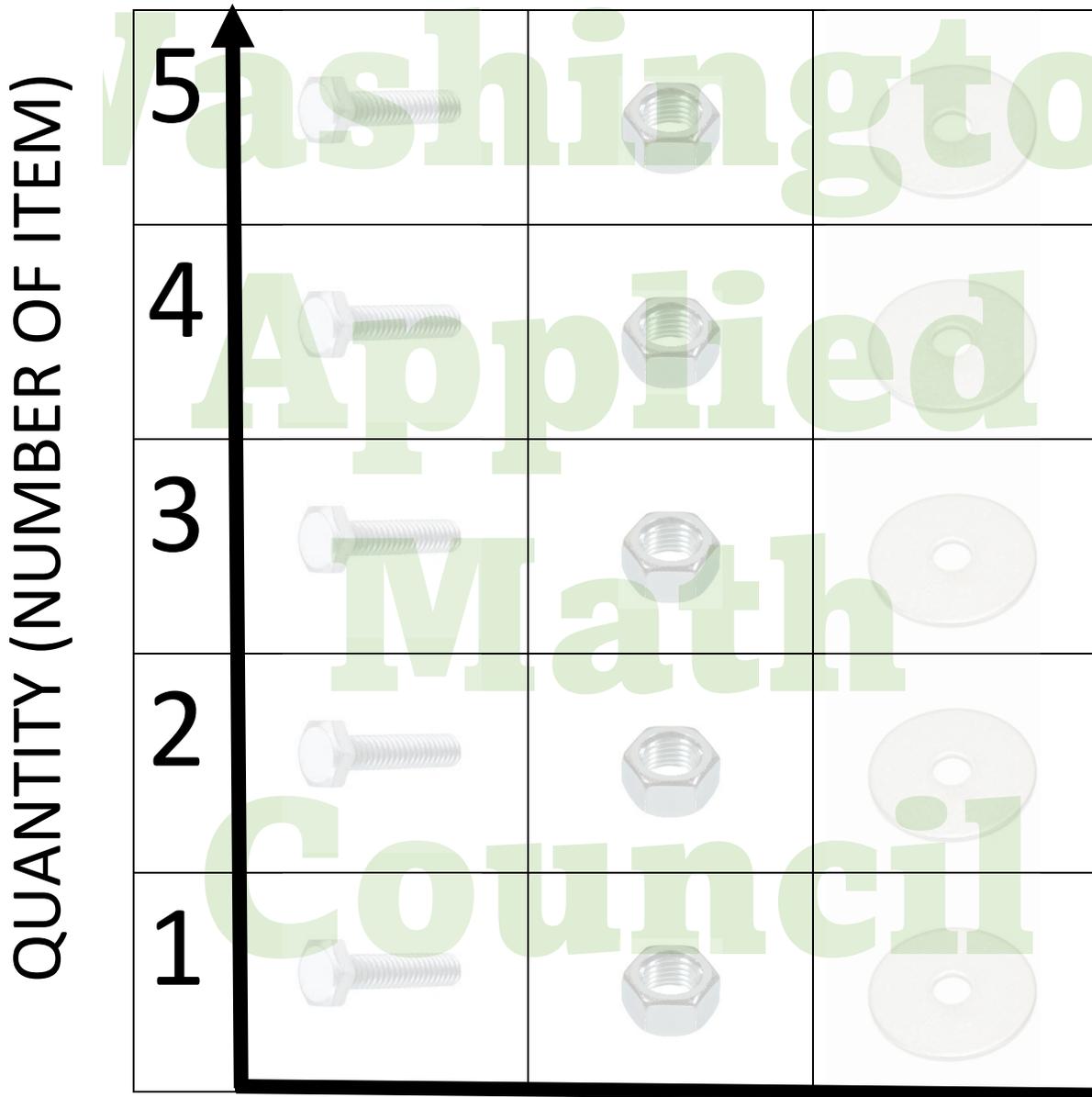
Career Applications

- Sorting, Inventory positions
- Life skills: 1:1 correspondence up to 5.

Optional or Extension Activities

- Add variables: Add extra hardware types to increase sorting challenge
- Add quantity: Increase quantity to 10 or more.
- Teach the idea of categories- Sort not only into similar items, but dissimilar items that are in the same category (washers of all sizes, screws/bolts, etc).
- Build basic addition and subtraction concepts. Explore the words “more”, “add”, “take away”, “less” in relation to inventory quantities.

SHOP INVENTORY



BOLTS

NUTS

WASHERS

TYPE OF ITEM

S-C-R-Q-C Data

Data collection form for activities that require action chain of Sort, Count, Report, Questions, Clean. You will need a timer/ watch to collect times.

* Required

1. Date *

Example: January 7, 2019

2. Time *

Example: 8:30 AM

3. Who is tracking data? *

Check all that apply.

- Paraeducator 1
- Paraeducator 2
- Paraeducator 3
- Mr. Briar

4. Which student is data being tracked for? *

Mark only one oval.

- MN
- MM
- Other: _____

5. For SORT activity, report minutes/seconds for task completion *

6. Check all that apply: For SORT activity, student completed the activity with the following supports: *

Check all that apply.

- Student completed with no supports
- Activity was modeled for student
- Student was verbally prompted 1-2 times
- Student was verbally prompted 3-5 times
- Student was verbally prompted more than 5 times
- Student required hand over hand support for task
- Student refused task

7. Check all that apply: For SORT activity, student completed the activity with the following accuracy: *

Check all that apply.

- Student completed with 100% accuracy
- Student completed with 1-2 errors
- Student completed with 3-4 errors
- Student completed with 5 or more errors
- Student refused task

Other: _____

8. For COUNT activity, report minutes/seconds for task completion *

9. Check all that apply: For COUNT activity, student completed the activity with the following supports: *

Check all that apply.

- Student completed with no supports
- Activity was modeled for student
- Student was verbally prompted 1-2 times
- Student was verbally prompted 3-5 times
- Student was verbally prompted more than 5 times
- Student required hand over hand support for task
- Student refused task

10. Check all that apply: For COUNT activity, student completed the activity with the following accuracy: *

Check all that apply.

- Student completed with 100% accuracy
- Student completed with 1-2 errors
- Student completed with 3-4 errors
- Student completed with 5 or more errors
- Student refused task

Other: _____

11. For REPORT activity, report minutes/seconds for task completion *

12. Check all that apply: For REPORT activity, student completed the activity with the following supports: *

Check all that apply.

- Student completed with no supports
- Activity was modeled for student
- Student was verbally prompted 1-2 times
- Student was verbally prompted 3-5 times
- Student was verbally prompted more than 5 times
- Student required hand over hand support for task
- Student refused task

13. Check all that apply: For REPORT activity, student completed the activity with the following accuracy: *

Check all that apply.

- Student completed with 100% accuracy
- Student completed with 1-2 errors
- Student completed with 3-4 errors
- Student completed with 5 or more errors
- Student refused task

Other: _____

14. For QUESTION activity, describe questions asked and student's response. Ensure availability of AAC, if applicable. *

15. For CLEAN activity, report minutes/seconds for task completion *

16. Check all that apply: For CLEAN activity, student completed the activity with the following supports: *

Check all that apply.

- Student completed with no supports
- Activity was modeled for student
- Student was verbally prompted 1-2 times
- Student was verbally prompted 3-5 times
- Student was verbally prompted more than 5 times
- Student required hand over hand support for task
- Student refused task

17. Check all that apply: For SELF-MONITORING/ Visual Schedule, student completed checklist with the following supports: *

Check all that apply.

- Student completed with no supports
- Activity was modeled for student
- Student was verbally prompted 1-2 times
- Student was verbally prompted 3-5 times
- Student was verbally prompted more than 5 times
- Student required hand over hand support for task
- Student refused task

18. Did student take a break during their work? *

Mark only one oval.

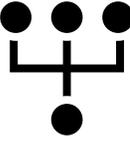
- Yes, break was requested verbally
- Yes, break was requested through PECS/AAC
- Yes, break was taken, student did not appropriately request break
- No break taken
- Other: _____

19. Staff Comment- any other information can be reported here.

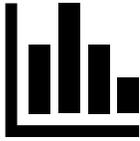
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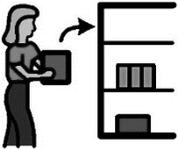
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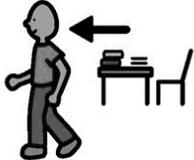
 <p>SORT</p>	
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 <p>COUNT</p>	
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 <p>REPORT</p>	
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 <p>QUESTIONS</p>	
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 <p>CLEAN</p>	
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 <p>BREAK</p>

Wilmington
Applied
Math
Council
<https://wa-appliedmath.org/>