



## Purpose

Have you ever worked all of the way through a set of instructions only to find a detail that forces you to go back and undo all of the work? Just as reading the instructions for a project before beginning work is important, so is carefully planning the steps in a problem-solving process.

In your solution proposal, you drafted procedures for your project. How clear and concise are your procedures? What needs to be clarified?

## Materials

### Per student:

- *Activity 3.1.1 Scenario Card*
- Assorted materials according to scenario card
- Computer with Internet access and word processing software
- *Agriscience Notebook*
- *Laboratory Notebook*
- Pencil

## Procedure

You will write step-by-step instructions for constructing a basic item or completing a basic skill. Then you will exchange directions with your partner and attempt to follow their procedure.

### Part One – Writing Instructions

1. Obtain a scenario card from your teacher.
2. Read the article, “How to write instructions,” from <http://www.techscribe.co.uk/ta/how-to-write-instructions.htm>.
3. Brainstorm a list of materials you will need in order to complete the task on your project card.
4. Gather the materials necessary for your task as directed by your teacher.
5. Complete the task one time to review the skill or technique. If you are unfamiliar with the process, you may need to research it online.
6. Take a picture or draw a sketch of the completed task.
7. Make a detailed list of the materials you used in your *Laboratory Notebook*.
8. Write a set of detailed, numbered steps that another person can follow to replicate your task. Assume the reader has never completed the task before. Type your instructions using word processing software.
9. Review and proofread your instructions for clarity and detail.
10. Complete the task by only following the instructions you have written. Revise as needed.

## Part Two – Reading Instructions

11. Exchange procedures with your partner.
12. Independently attempt the instructions exactly as written.
13. Do not ask questions of or give advice to your partner.
14. Compare your product to the product made by your partner in Part One.
  - What differences do you see? Why do you think this is so?



- How could your partner improve the instructions to ensure better results?

15. Provide feedback to your partner.
16. Adjust your instructions according to the feedback you received.

## Part Three – Planning Your Project

17. With your partner, review the draft of your step-by-step procedures from your Solution Proposal.
18. In your electronic copy, revise the materials and procedures to improve clarity, grammar, and repeatability.

## Conclusion

19. How do diagrams and illustrations assist a reader in understanding instructions?
20. Why are step-by-step instructions critical in the problem-solving process?
21. What is the most difficult part of writing step-by-step instructions?

Part 1:

- 1) Find one shoe with laces that are untied.
- 2) Place shoe on a table with the laces and foot opening facing up, the toe facing away from you, and the heel towards you.  
Straighten laces so that the left lace is laying on the left of the shoe on surface pointing away from you and the right lace is laying on the right of the shoe on the surface pointing away from you.
- 3) Pick up the top of the left lace with your left forefinger and thumb, with the end pointing up.  
Pick up the top of the right lace with your right forefinger and thumb, with the end pointing up.
- 4) Cross the left laces over the back (towards heel of shoe) of the right lace,
- 5) Put left lace down on surface, so that it is pointing away from you (pointing same direction as the toe of the shoe- Let go of the lace in your left hand.
- 6) Right lace should still be in your right hand. Left hand is now empty.
- 7) Put right lace into left hand and let go of the lace with your right hand.
- 8) With Right hand, pick up the lace that is on the surface

- 9) Laces are making an "X"
  - 10) Move right lace towards the toe (away from you) of the shoe.
  - 11) Move right lace to left side of the toe of the shoe.
  - 12) Move the right lace to the bottom of the left lace.
  - 13) Put the end of the right lace under the right lace that is to the left of the left lace under the right lace.)
  - 14) Let go of lace in right hand.
  - 15) Move your right hand towards heel of shoe, with right hand, grab the end of the right lace.
  - 16) Pull left lace with left hand while pulling right lace with right hand, until tight.
  - 17) Let go of laces so that left lace is pointing left, and right lace is pointing right
  - 18) Locate the last eyelet (hole for laces) (the eyelet closest to heel) on the left side shoe.
  - 19) With right forefinger and right thumb, grab the left lace about an inch from the last eyelet on the left side of shoe.
  - 20) Move left lace so that it makes about a 90 degree angle above shoe.
  - 21) With left forefinger and thumb, find the equal distance of lace on the left side of the lace. Grab this part of the left lace and bring to spot where the left lace comes out of the first tie.
  - 22) With left hand, hold the left side of lace and now the right side of the left lace, making a loop.
  - 23) Once you have both parts of the left lace between the left forefinger and thumb, let go of the top of the loop with the right hand.
  - 24) With right forefinger and thumb, grab the end (part farthest from shoe) of the right lace
  - 25) With the right hand, Move end of lace counterclockwise (towards top of shoe) over top your left hand (still holding loop of left lace) to the heel of the shoe.
  - 26) Bring right lace around the heel of the shoe to the top right of shoe. Let go of right lace so that it is pointing away from you.
  - 27) There should be a hole between your left forefinger and bottom (part of loop furthest you) of the right lace
  - 28) With right forefinger and thumb, grab the right lace close to your left thumb.
  - 29) Push this part of the lace between your left thumb and the bottom of the right lace. You may need to hold the right lace that you are moving between your left forefinger (still holding the left loop- don't let go of that!) and your right thumb in order to use your right forefinger to make the hole bigger. With right thumb, push the right lace that you are holding between your left forefinger and the back side of the right lace loop.
  - 30) Use your right forefinger to slightly move the right lace that your thumb is moving between by your left forefinger to the middle knuckle of your left forefinger.
  - 31) Let go of both loops.
  - 32) With left forefinger and thumb, grab top of loop you just made on the left.
  - 33) With right forefinger and thumb, grab the top of the loop on the right.
  - 34) Slowly pull left loop to the left while pulling right loop right
  - 35) Pull until tight.
- Hopefully you just tied a shoe!

