



Making a Proper Algorithm

Step 1: Identify the Problem

- Get detailed information on the problem
- Identify issues with problem description
- Usually given in the form of a prompt in ENGI 1331

Step 2: Analyze the Problem

- Find the start point of the problem
 - What inputs are given? Are there any restrictions on these inputs?
 - What formulas do I need?
 - What relationships exist in the given inputs?
- Find the end point of the problem
 - What outputs are needed?
 - How should these outputs be returned?
 - What data has changed?

Step 3: Develop a High-Level Algorithm

For the birthday card activity, the following high-level algorithm is an example:

1. Visit a store that sells birthday cards
2. Pick out a birthday card
3. Purchase the birthday card
4. Mail the card to your sister

Is this algorithm good enough?

Step 4: Refine the Algorithm

For the birthday card activity, the following questions should be considered when refining the algorithm:

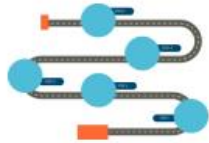
1. Which store will you visit?
2. How will you get to the store?
3. How old is your sister?
4. What kind of card does your sister like?
5. How will you pay for the card?
6. Where does your sister live?
7. Where is the post office?

When is an algorithm refined enough?

Step 5: Review the Algorithm

- Work through the algorithm step by step and check if it will work
- If it will work, then consider whether the algorithm is good enough or if it can/should be simplified or refined further
- If it won't work, identify and fix the mistake in the algorithm

Algorithm Steps Visualization:



Algorithm → Flow Chart → Pseudo code → Coding