Principle 2

Determine Critical Control Points

Principle #2

- Principle 1:
  - Hazard Analysis identified process steps associated with the introduction, increase, or control of potential hazards that are both severe & frequent (= significant hazards)

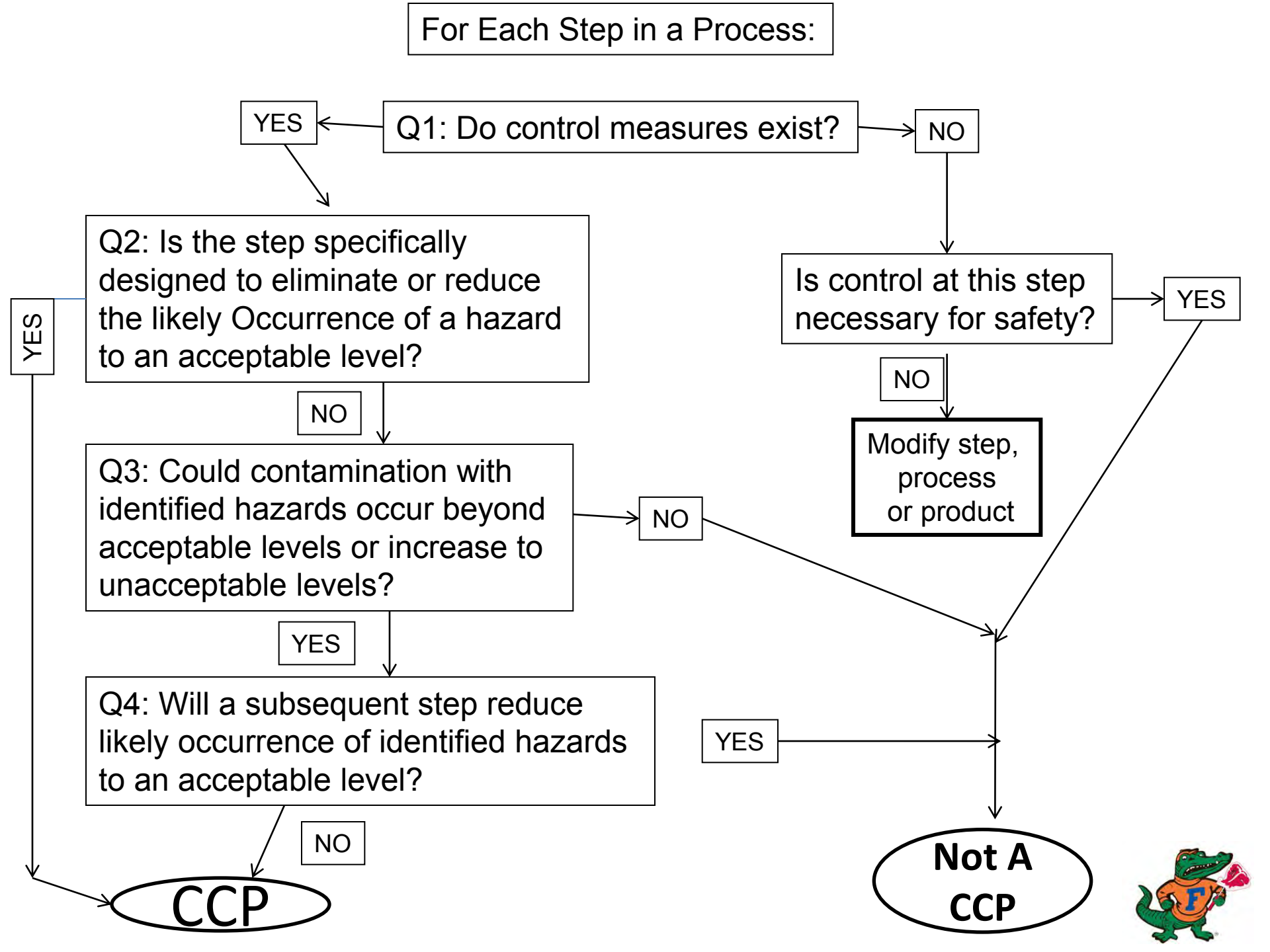
- Principle 2:
- Identify the Critical Control Points (CCPs) in the process

CCPs

- CCPs are located at any step in the process at which control can be applied & is essential to prevent, control or eliminate a food safety hazard or reduce it to an acceptable level

- May use tools
  - decision tree
  - expert knowledge

- Applied only to processes where hazards are severe & frequent (= significant hazards)


For Each Step in a Process:
Q1: Do control measures exist?
YES
NO
Q2: Is the step specifically designed to eliminate or reduce the likely Occurrence of a hazard to an acceptable level?
YES
NO
Is control at this step necessary for safety?
YES
NO
Modify step, process or product
Q3: Could contamination with identified hazards occur beyond acceptable levels or increase to unacceptable levels?
NO
YES
Q4: Will a subsequent step reduce likely occurrence of identified hazards to an acceptable level?
YES
NO
CCP
Not A CCP

CCP Determination

Process Step (if it is a significant hazard)	Hazard (Biological, Chemical, or Physical) Describe hazard	Do preventive measures exist for the identified hazard(s)? If NO, not a CCP If YES, move to next question	Does this step eliminate or reduce the likely occurrence of a hazard to an acceptable level? If NO, move to next question If YES, this is a CCP.	Could contamination with the identified hazard occur in excess of acceptable levels or could the hazard increase to unacceptable levels? If NO, not a CCP If YES, move to next question	Will a subsequent step eliminate hazard or reduce its likely occurrence to an acceptable level? If NO, this is a CCP If YES, this is not a CCP	CCP Number

CCP Determination Canned Beets

Process Step (if it is a significant hazard)	Hazard (Biological, Chemical, or Physical) Describe hazard	Do preventive measures exist for the identified hazard(s)? If NO, not a CCP If YES, move to next question	Does this step eliminate or reduce the likely occurrence of a hazard to an acceptable level? If NO, move to next question If YES, this is a CCP.	Could contamination with the identified hazard occur in excess of acceptable levels or could the hazard increase to unacceptable levels? If NO, not a CCP If YES, move to next question	Will a subsequent step eliminate hazard or reduce its likely occurrence to an acceptable level? If NO, this is a CCP If YES, this is not a CCP	CCP Number
Retort	Germination of clostridium botulin spores	YES	YES			B1

CCP Determination Chicken Nuggets

Process Step (if it is a significant hazard)	Hazard (Biological, Chemical, or Physical) Describe hazard	Do preventive measures exist for the identified hazard(s)? If NO, not a CCP If YES, move to next question	Does this step eliminate or reduce the likely occurrence of a hazard to an acceptable level? If NO, move to next question If YES, this is a CCP.	Could contamination with the identified hazard occur in excess of acceptable levels or could the hazard increase to unacceptable levels? If NO, not a CCP If YES, move to next question	Will a subsequent step eliminate hazard or reduce its likely occurrence to an acceptable level? If NO, this is a CCP If YES, this is not a CCP	CCP Number
Grinding	Possible increase in Salmonella	YES	NO	YES	YES	Hazard controlled at step 6 - cooking

Examples of CCPs

- Thermal Processing (cooking)
- Chilling
- Product characteristics (e.g. pH and a_w)
- Degree-hours for fermentation of sausages
- Addition of rework to an allergen-free product
- Addition of controlled ingredients (e.g. pure nitrite)

Examples of CCPs, CPs, & MCPs

Type of Attribute	CCP	CP
Biological	CoA for *Salmonella* in dried milk	Freezing temp on cooked RTE, APC (spec.)
Chemical	Addition of nitrite/salt	TBA value, Fat level
Physical	Metal detection (baby food)	Product thickness, Piece weight