

# Planning Backwards to Achieve Goals

What will students have done by the end of the project?

What needs to be done in order to achieve the goal(s)?

What needs to be done to meet milestones?

**Project Goals**  
Long term

**Establish Milestones**  
[Bi or tri weekly]

**Set Tasks**  
[Daily or Weekly]

## Type 1 Goal Examples

- Assess the visibility of 3 different processing routes
- Build a device to measure something
- Determine the relationship between components of a system
- Complete a user study or design an ethnography

## Type 1 Goal Examples

- Read and summarize a research paper
- Machine holder for a lens
- Take focused SEM images
- Write a function to...

## Examples

- Meet to discuss literature
- Create a table of experimental variables
- Take a tour of the machine shop
- Get trained to operate a machine
- Write a function in C++
- Make documentation about a method in the lab

## Type 2 Goal Examples

- Complete first draft of a paper to be submitted for publication
- Present research findings to a society
- Create and present a poster for a local symposium

## Type 2 Goal Examples

- Write up experimental procedure
- Draft introduction
- Create schematic

There may be **experiential goals** as well like:  
Appreciating the non-linearity of scientific research  
Being able to function in a multidisciplinary research team

[You may decide to let students define the tasks needed to meet the milestones]

**Credit:** Janet Rankin, PhD; Director, MIT's Teaching + Learning Lab