

## **Instructors**

Professor Adam Leaché

leache@uw.edu

Professor Janneke Hille Ris Lambers

jhrl@uw.edu

## **Instructors**

Professor Adam Leaché

leache@uw.edu

Professor Janneke Hille Ris Lambers

jhrl@uw.edu

## **Staff**

John Parks, Course coordinator

jwparks@uw.edu

Celese Spencer, Field trips

celese@uw.edu

## Instructors

Professor Adam Leaché

[leache@uw.edu](mailto:leache@uw.edu)

Professor Janneke Hille Ris Lambers

[jhrl@uw.edu](mailto:jhrl@uw.edu)

## Staff

John Parks, Course coordinator

[jwparks@uw.edu](mailto:jwparks@uw.edu)

Celesa Spencer, Field trips

[celese@uw.edu](mailto:celese@uw.edu)

## Teaching Assistants

Mikaela Freeman ([mcfree@uw.edu](mailto:mcfree@uw.edu))

Max Mossler ([mossler@uw.edu](mailto:mossler@uw.edu))

Cooper French ([cooperii@uw.edu](mailto:cooperii@uw.edu))

Jong Hwee “Jeff” Park ([jpark89@uw.edu](mailto:jpark89@uw.edu))

Scott Jackson ([jacks979@uw.edu](mailto:jacks979@uw.edu))

Emily Roberts ([earobert@uw.edu](mailto:earobert@uw.edu))

Rochelle Kelly ([rmkelly@uw.edu](mailto:rmkelly@uw.edu))

Jeff Smith ([jrs2@uw.edu](mailto:jrs2@uw.edu))

Ethan Linck ([elinck@uw.edu](mailto:elinck@uw.edu))

Katie Stanchak ([stanchak@uw.edu](mailto:stanchak@uw.edu))

Zach Meyer ([zmeyer@uw.edu](mailto:zmeyer@uw.edu))

# **Adding the course**

**Non-matriculated students**

**JWPARKS@UW.EDU**

**All other students**

**Check online frequently**

**Enrollment will be open until**

**Thursday midnight**

**You may enroll in a lab section**

**that has already met**

# Clickers

What kind? -- Website

Correctly registered by Wednesday  
at 9:00 AM -- 3 points

Used clickers -- Device ID may be  
difficult to read

**JWPARKS@UW.EDU**

# Outline

1. What is this course about?
2. How does this course work?
3. Experimental design

# What you should *know* by the time you finish BIOL 180

- The evolutionary history and diversity of life on Earth.
- The genetic basis of evolutionary change.
- The ways in which organisms interact with their environment & each other.
- The specialized language of biology.
- HOW TO THINK LIKE A BIOLOGIST.

# Pre-Health & Evolution



## Competency E8

*Demonstrate an understanding of how the organizing principle of evolution by natural selection explains the diversity of life on earth.*

1. Explain how genomic variability and mutation contribute to the success of populations.

Examples:

- Explain how inappropriate use of antibiotics has contributed to the evolution of antibiotic-resistant strains of bacteria.
- Explain the persistence of the sickle cell allele in populations of African descent.

2. Explain how evolutionary mechanisms contribute to change in gene frequencies in populations and to reproductive isolation.

Examples:

- Explain how competition for resources can contribute to fixation of a mutant allele in a population over time.
- Explain how pathogenic or symbiotic interactions shape community structure (for example, changes in the virulence of an emerging pathogen, or influence of nutrition or antibiotics on the composition of the gut flora).



**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

Criteria for Medical School Recommendations

**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research

**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**

**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**

**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination

**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills

**Our job: Prepare you to succeed in Biology 200  
and upper level courses, and possibly  
a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills
- **Written** communication skills



**Our job: Prepare you to succeed in Biology 200 and upper level courses, and possibly a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills
- **Written** communication skills
- Ability to **work with others**

**Our job: Prepare you to succeed in Biology 200 and upper level courses, and possibly a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills
- **Written** communication skills
- Ability to **work with others**
- **Maturity**

**Our job: Prepare you to succeed in Biology 200 and upper level courses, and possibly a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills
- **Written** communication skills
- Ability to **work with others**
- **Maturity**
- **Emotional stability**

**Our job: Prepare you to succeed in Biology 200 and upper level courses, and possibly a career related to biology.**

## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills
- **Written** communication skills
- Ability to **work with others**
- **Maturity**
- **Emotional stability**
- Industry and **persistence**

**Our job: Prepare you to succeed in Biology 200 and upper level courses, and possibly a career related to biology.**

## Criteria for Medical School Recommendations

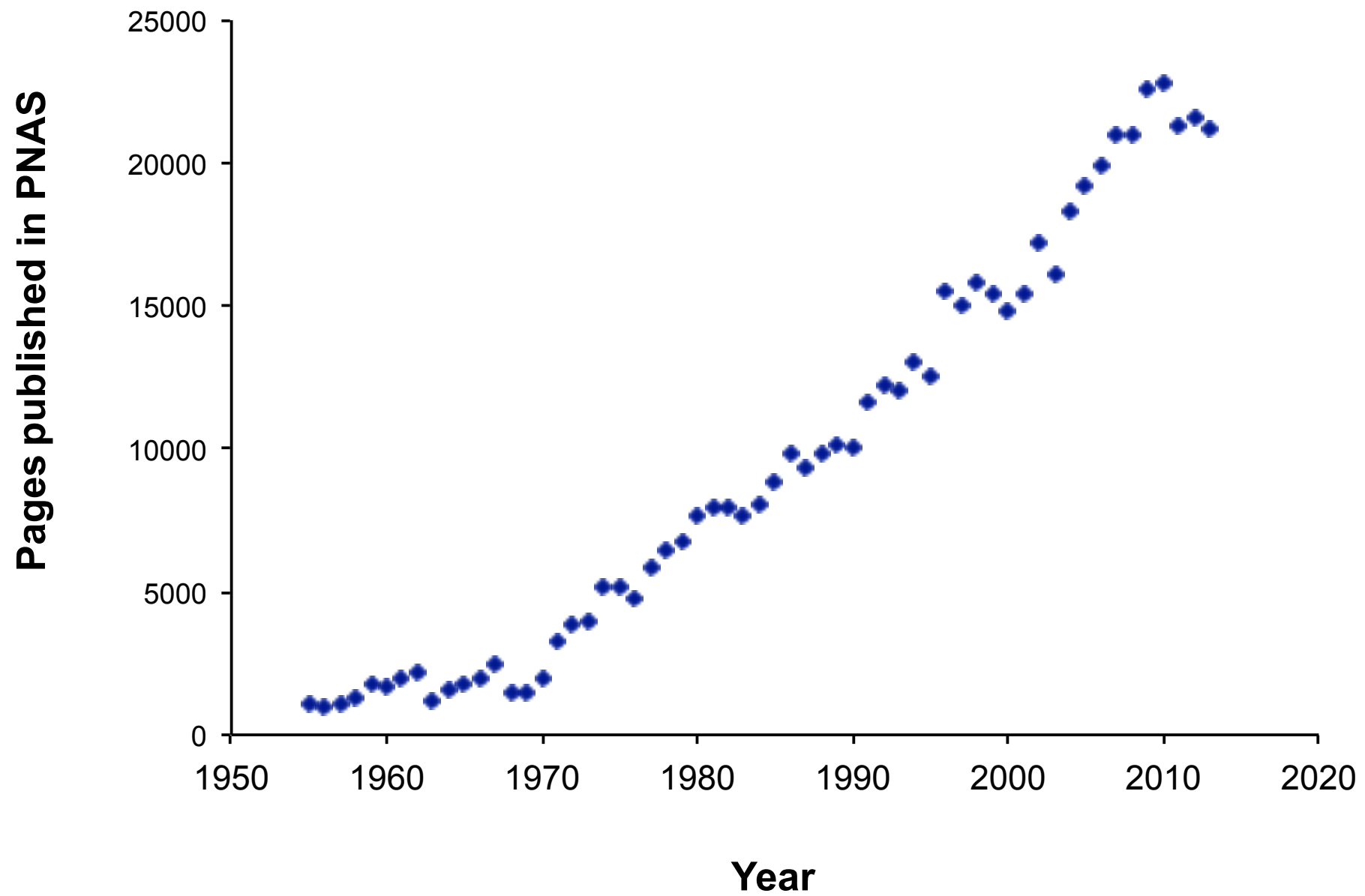
- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills
- **Written** communication skills
- Ability to **work with others**
- **Maturity**
- **Emotional stability**
- Industry and **persistence**
- Planning & **organizational skills**

**Our job: Prepare you to succeed in Biology 200 and upper level courses, and possibly a career related to biology.**

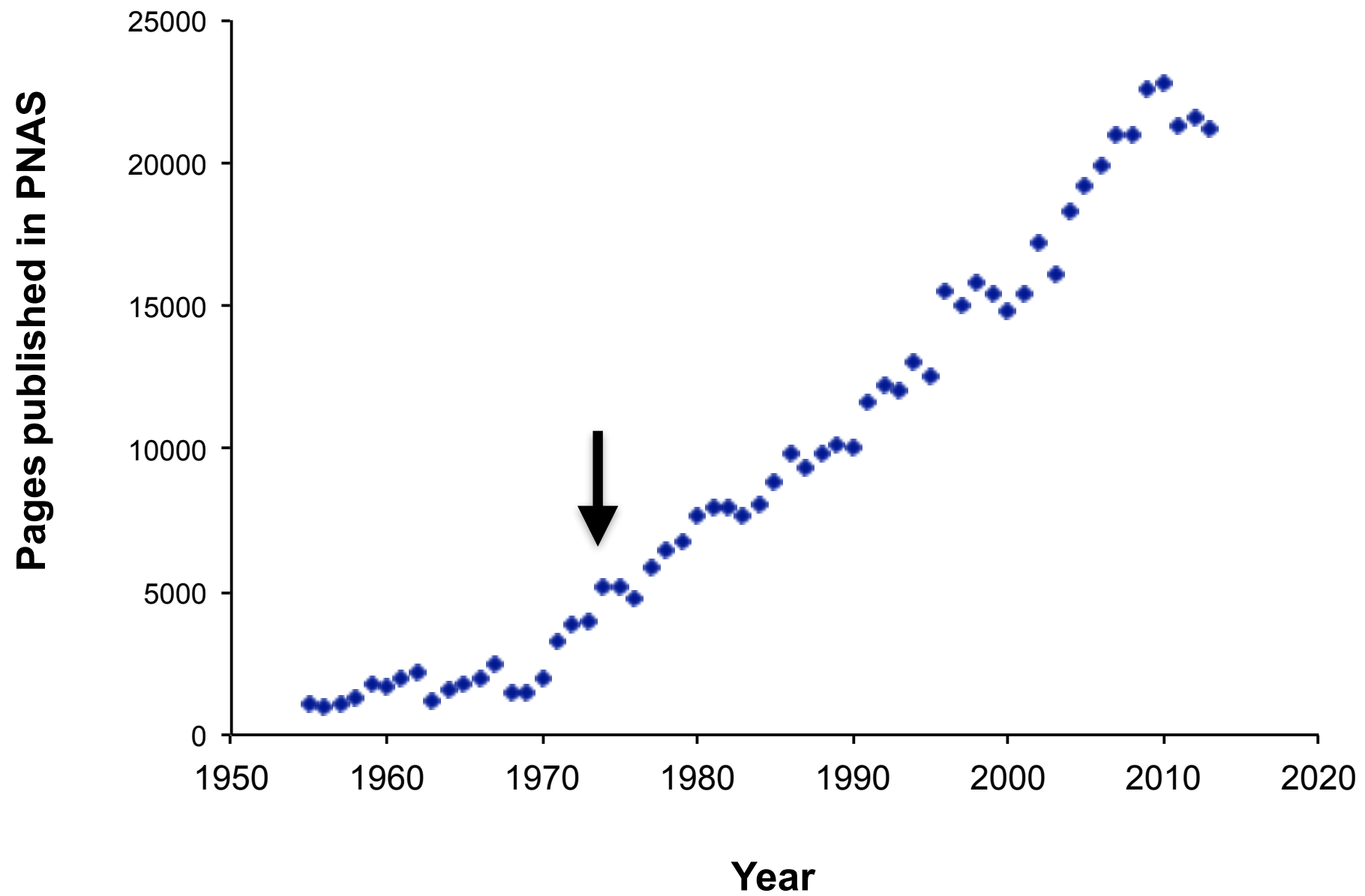
## Criteria for Medical School Recommendations

- **Motivation** for training in research
- Intellectual potential & **curiosity**
- Ability to **analyze/problem-solve**
- **Creativity** and imagination
- **Oral** communication skills
- **Written** communication skills
- Ability to **work with others**
- **Maturity**
- **Emotional stability**
- Industry and **persistence**
- Planning & **organizational skills**
- Ethics & **integrity**

# What is the overall course goal?

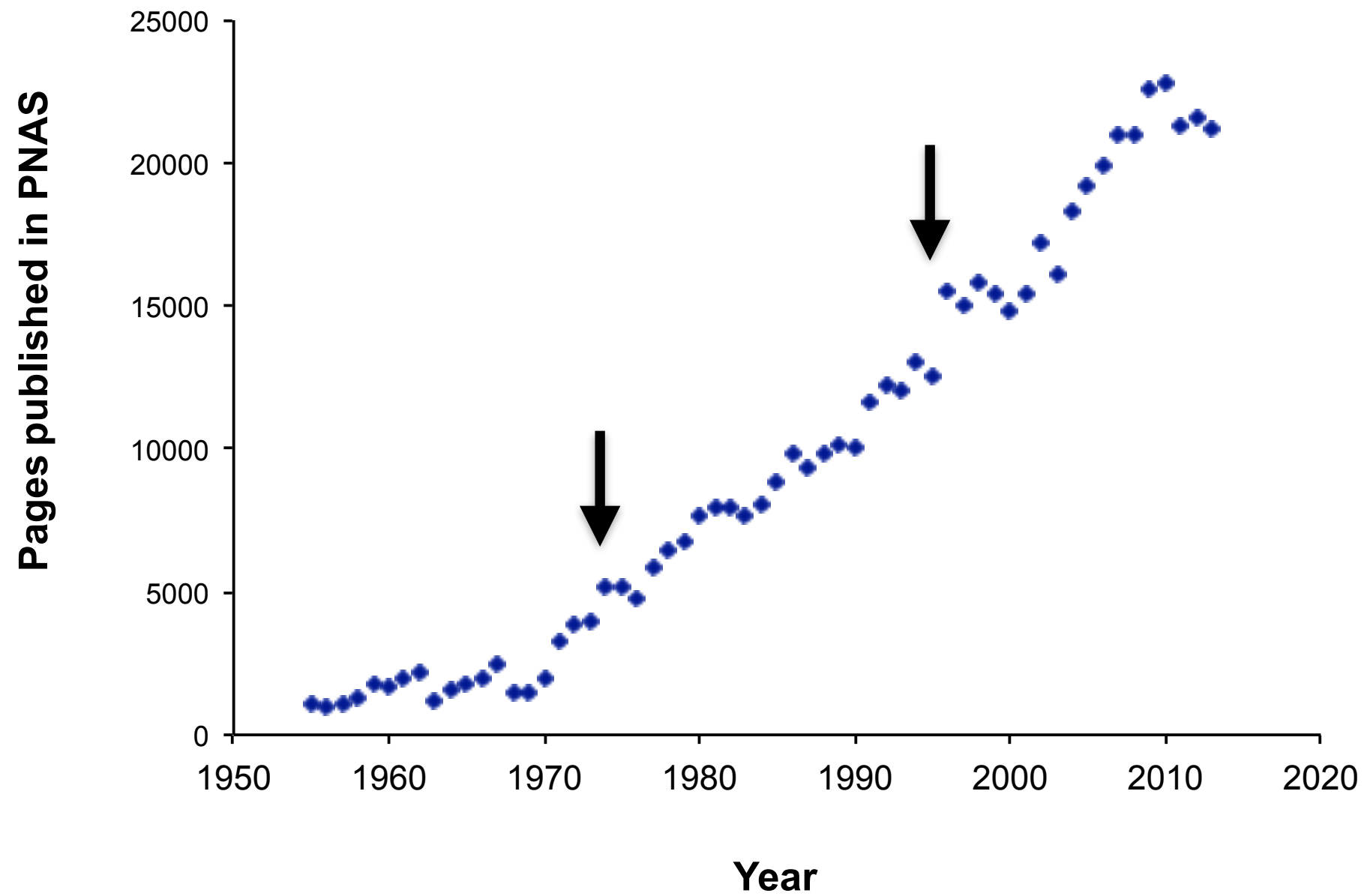


# What is the overall course goal?

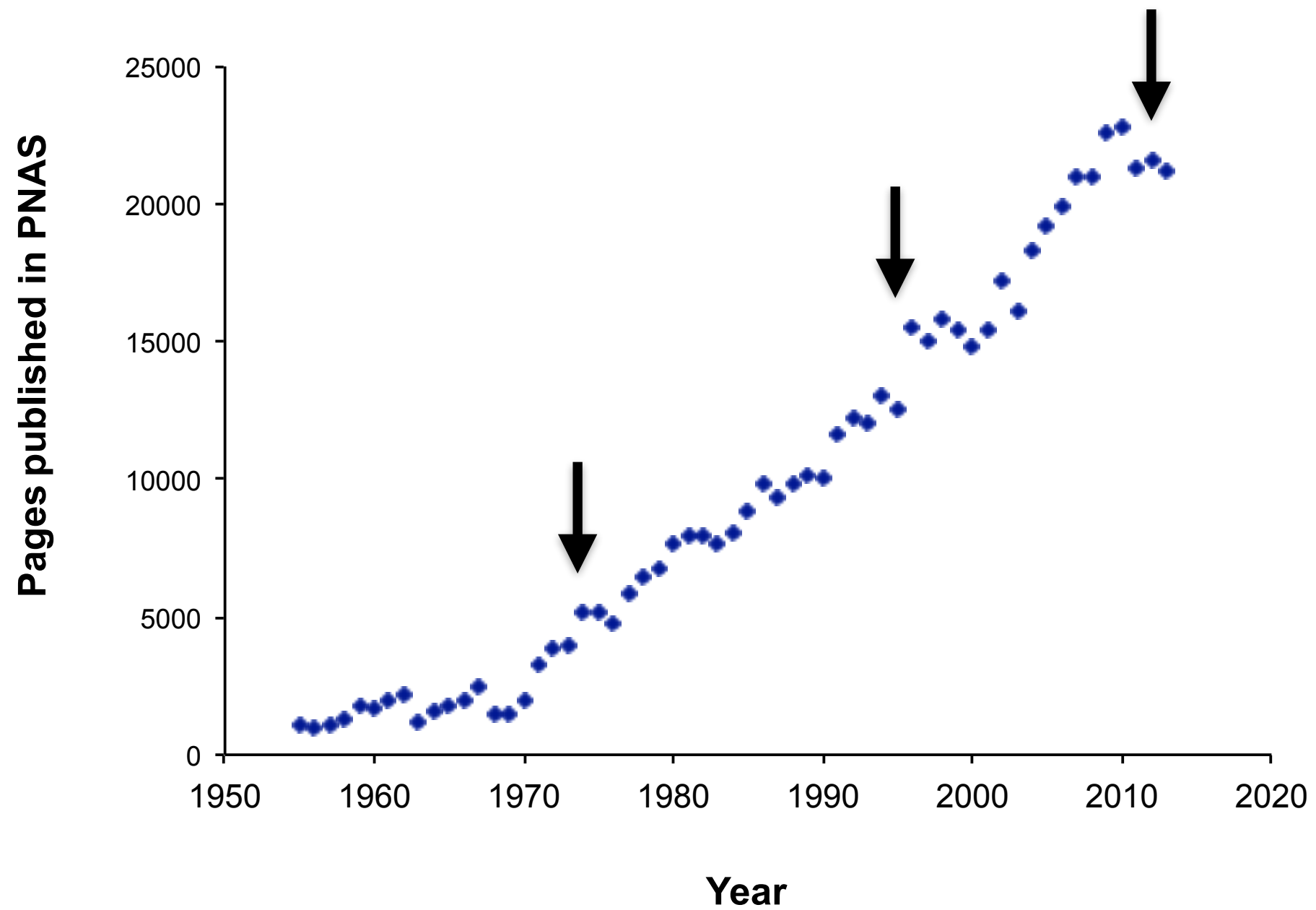




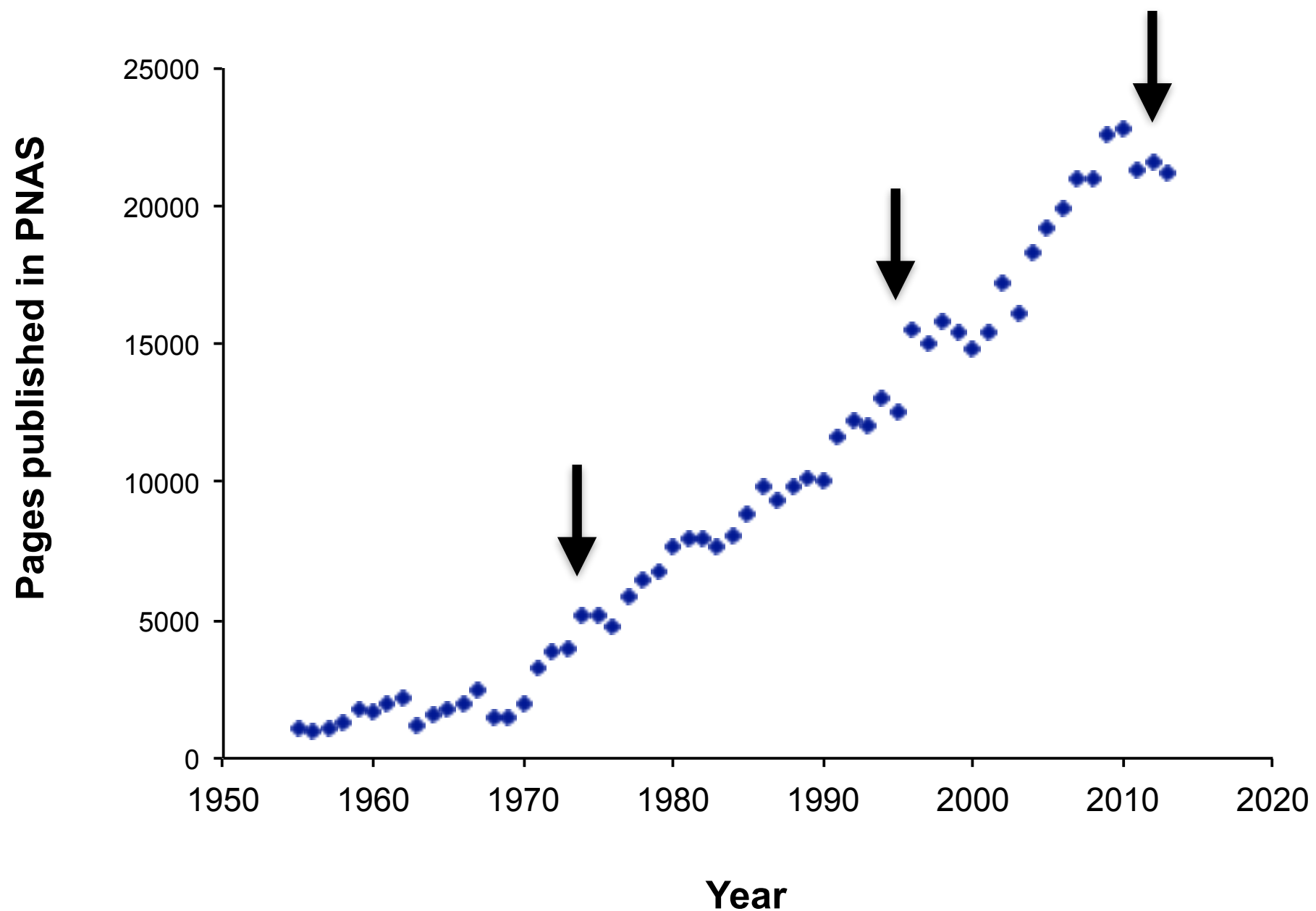
# What is the overall course goal?



# What is the overall course goal?



**What is the overall course goal?**



**What conclusions can you draw from this graph?**

# **Bloom's taxonomy of learning**

# **Bloom's taxonomy of learning**

**Remember:** Can I recall key terms and ideas?

# Bloom's taxonomy of learning

**Understand:** Can I explain these ideas to someone else?



**Remember:** Can I recall key terms and ideas?

# Bloom's taxonomy of learning

**Apply:** Can I use these ideas in a new situation?



**Understand:** Can I explain these ideas to someone else?



**Remember:** Can I recall key terms and ideas?

# Bloom's taxonomy of learning

## **Analyze:**

Can I recognize  
underlying patterns  
and structure?



**Apply:** Can I use these ideas in a new situation?



**Understand:** Can I explain these ideas to someone else?



**Remember:** Can I recall key terms and ideas?



# Bloom's taxonomy of learning

## **Analyze:**

Can I recognize  
underlying patterns  
and structure?

## **Evaluate:**

Can I make judgments  
on the relative value of  
ideas and information?

**Apply:** Can I use these ideas in a new situation?

**Understand:** Can I explain these ideas to someone else?

**Remember:** Can I recall key terms and ideas?

# Bloom's taxonomy of learning

## **Analyze:**

Can I recognize  
underlying patterns  
and structure?

## **Evaluate:**

Can I make judgments  
on the relative value of  
ideas and information?

## **Synthesize:**

Can I join ideas and  
information to create  
something new?

**Apply:** Can I use these ideas in a new situation?

**Understand:** Can I explain these ideas to someone else?

**Remember:** Can I recall key terms and ideas?

# Bloom's taxonomy of learning

## **Analyze:**

Can I recognize underlying patterns and structure?

## **Evaluate:**

Can I make judgments on the relative value of ideas and information?

## **Synthesize:**

Can I join ideas and information to create something new?

**Apply:** Can I use these ideas in a new situation?

**Understand:** Can I explain these ideas to someone else?

**Remember:** Can I recall key terms and ideas?

Lower order thinking

# Bloom's taxonomy of learning

## **Analyze:**

Can I recognize underlying patterns and structure?

## **Evaluate:**

Can I make judgments on the relative value of ideas and information?

## **Synthesize:**

Can I join ideas and information to create something new?

Higher order thinking

**Apply:** Can I use these ideas in a new situation?

Lower order thinking

**Understand:** Can I explain these ideas to someone else?

**Remember:** Can I recall key terms and ideas?

## **2. How does this course work?**

**Why cell phones are not allowed in Bio I 80**

## **2. How does this course work?**

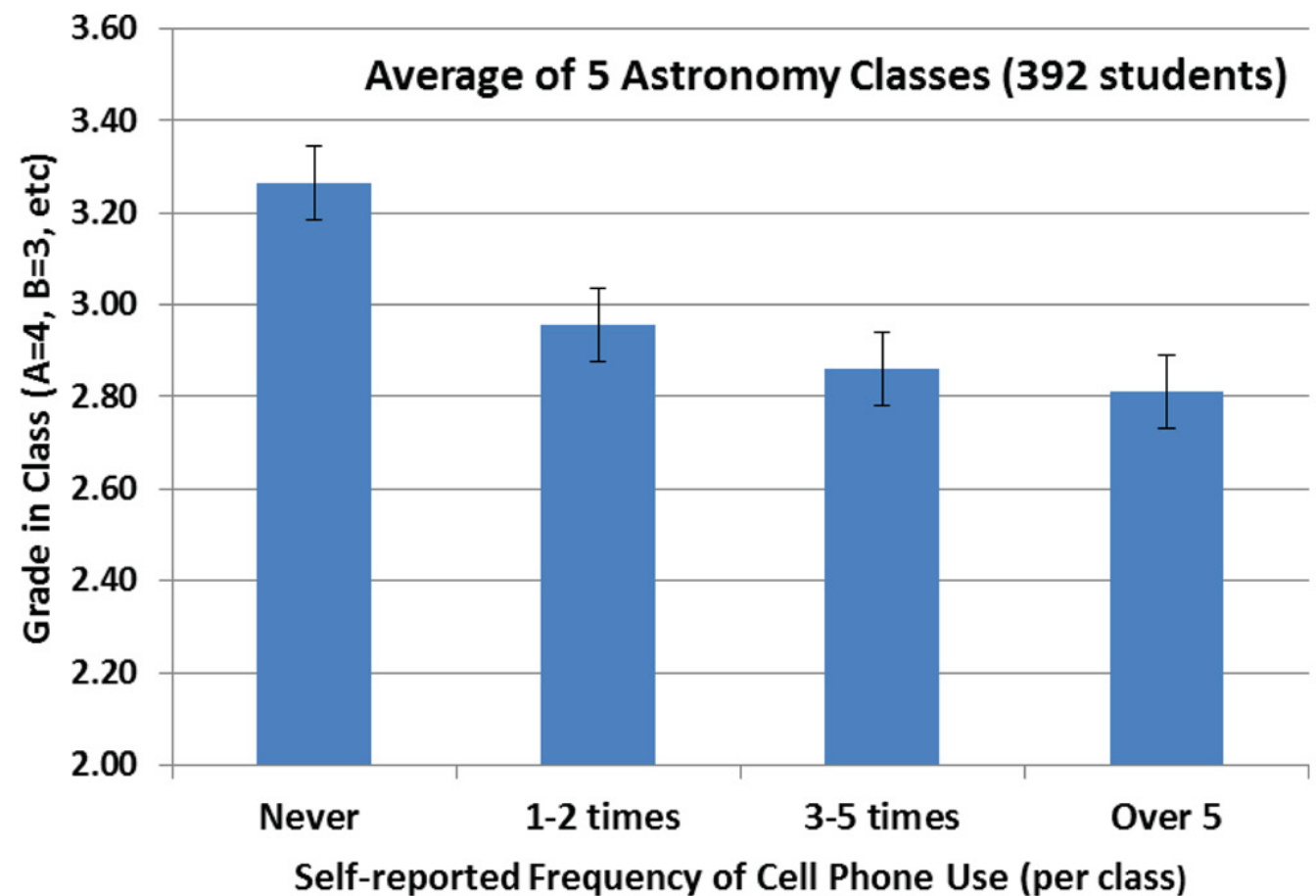
### **Why cell phones are not allowed in Bio I 80**

- 1. Professional development**
- 2. Student performance**

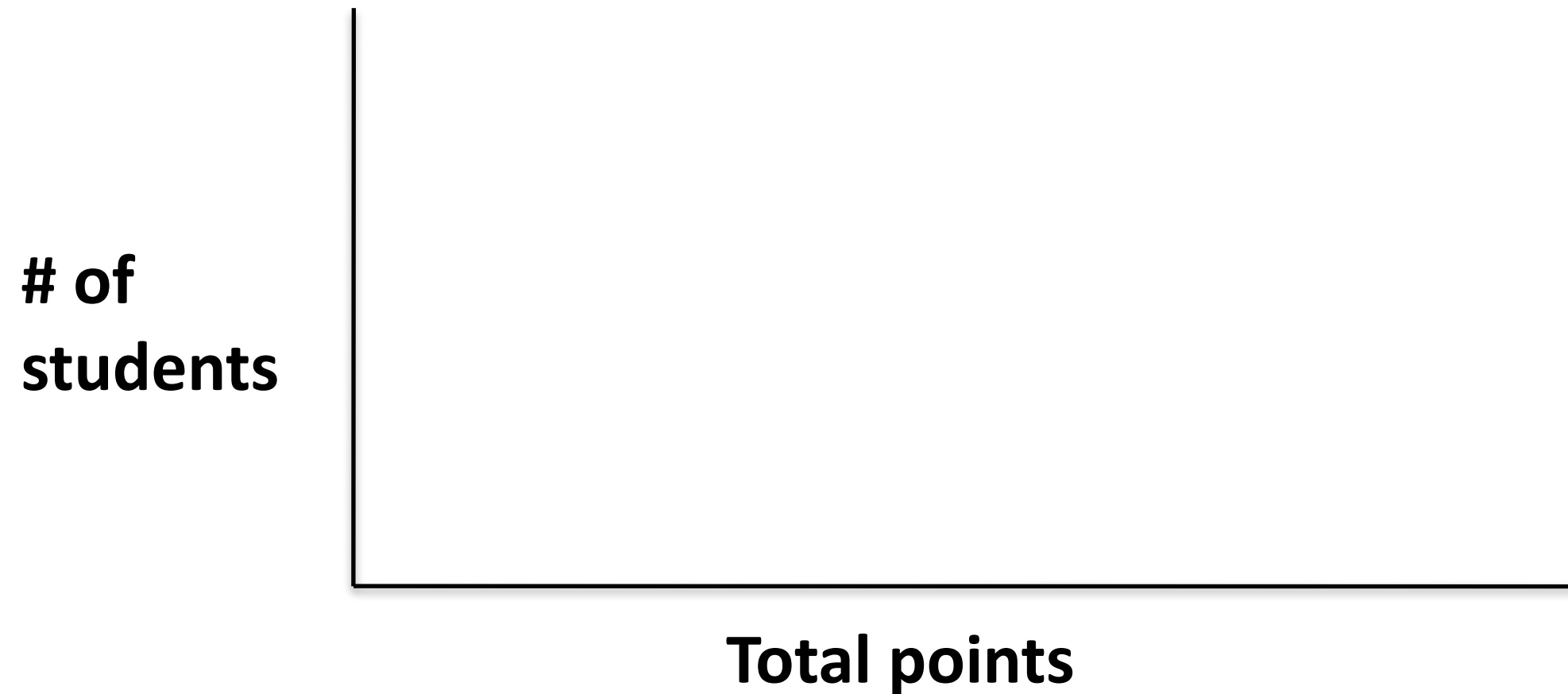
## 2. How does this course work?

### Why cell phones are not allowed in Bio I 80

1. Professional development
2. Student performance

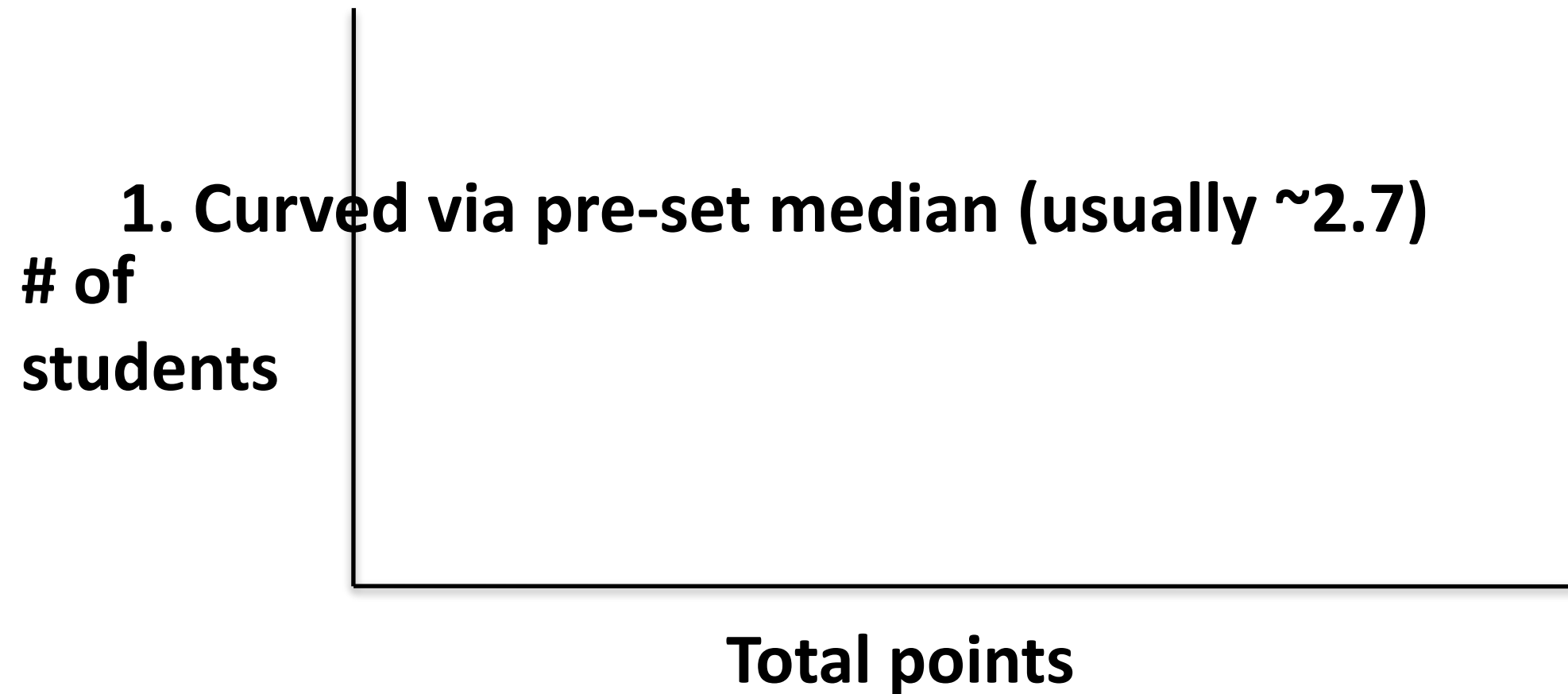


## Grading: What best describes the 180 system?

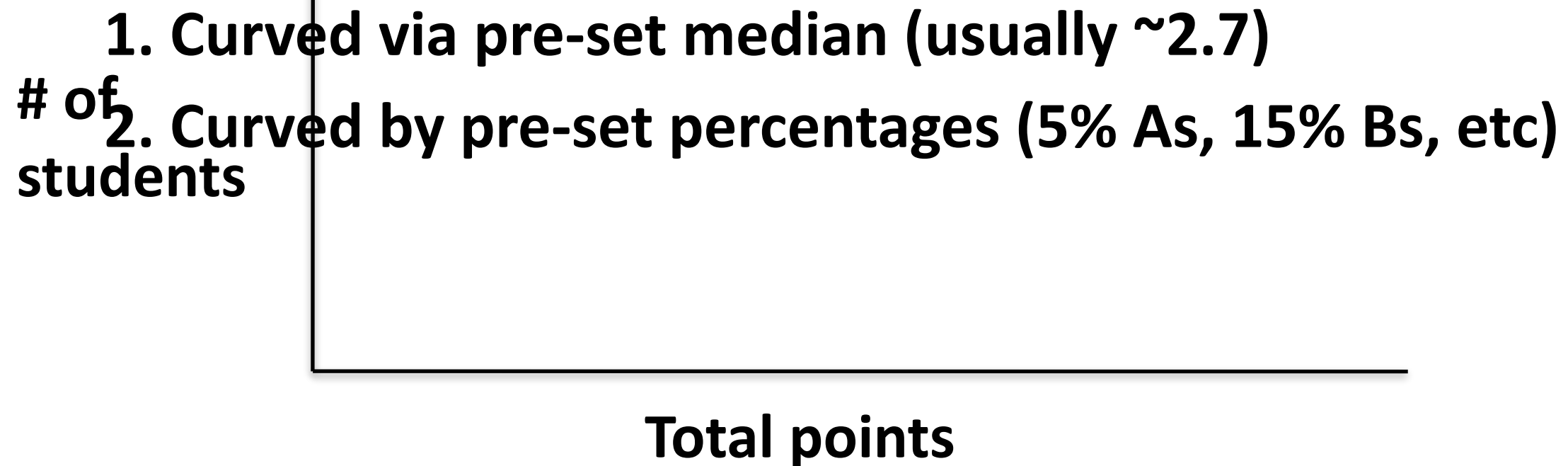




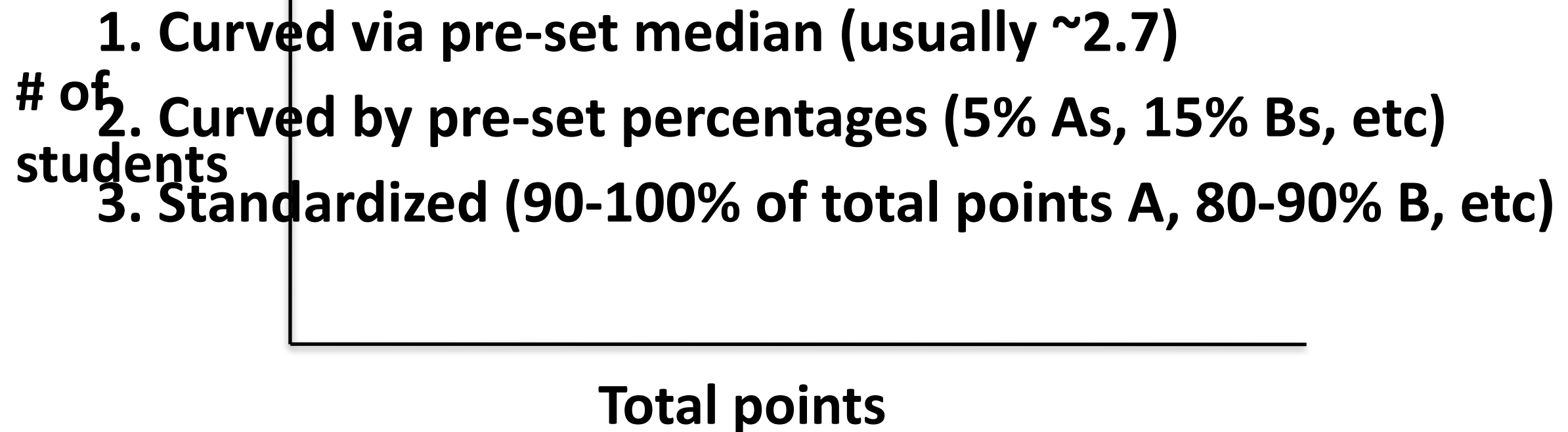
## Grading: What best describes the 180 system?



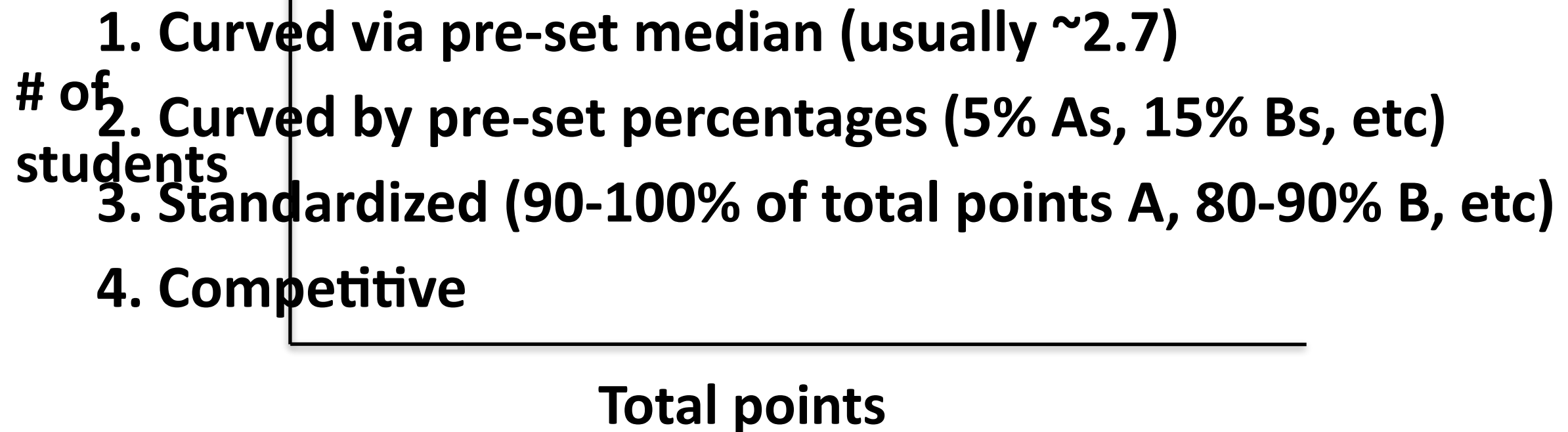
## Grading: What best describes the 180 system?



## Grading: What best describes the 180 system?



## Grading: What best describes the 180 system?



## Grading: What best describes the 180 system?

- 
- # of students
1. Curved via pre-set median (usually ~2.7)
  2. Curved by pre-set percentages (5% As, 15% Bs, etc)
  3. Standardized (90-100% of total points A, 80-90% B, etc)
  4. Competitive
  5. Non-competitive
- Total points

# What is *not* science

## Experimental Design Module

- Interpreting data and designing experiments
- Work in small groups
- We're here to answer questions
- TA's will collect at the end of lecture

