

Physics 2091H

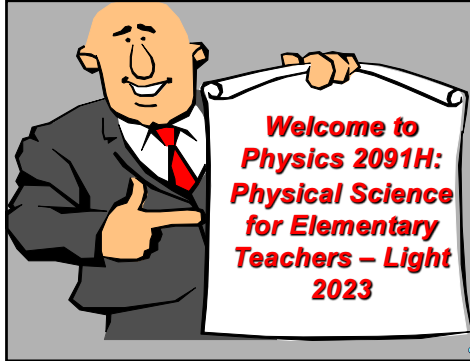
Put on your speakers or earphones first

The audio part of this presentation was recorded for an earlier semester and so it may not make complete sense for our course...

Then, up on the top tool bar of your screen click on:
"Slide Show" and then
"View Show"


Then hit the **"space bar"** once

1



**Welcome to
 Physics 2091H:
 Physical Science
 for Elementary
 Teachers – Light
 2023**

2




Johann Beda

First: let's get to know who I am; that's me

Instructor at Trent since 2003....

- taught at UIUC, McMaster, Trent
- Research interests in Physics Education

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Instructor at Trent since 2003....

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Research

- High Energy Theory (Particle Physics)
- Physics Education

Interested in how people learn science...

4

I would like you to jot down (on the worksheets) three or four ideas about what type of person would get the most out of this class.

1) *Just hello*

2)

3)


4)

5

Now share your list of ideas with your neighbour for a few minutes.

Do they have different ideas from you?


6



Who would you like to be?

Your name here

7



Who would you like to be?

Write that name on your fancy new journal.

Your name here

8

I would like you to jot down (on the worksheets) three or four items about you... anything you think might interest others

- 1) *Just hello*
- 2)
- 3)
- 4)

9

Now share your list (and your name) with your neighbour for a few minutes. Meet a classmate.

(Don't worry, you will not have to share with everyone)

10

We all do it sometimes, don't we?



11

Again on the worksheets, I'd like you to jot down three or four ideas about your expectations for the course....

- 1)
- 2)
- 3)
- 4)

12

Again on the worksheets, I'd like you to jot down three or four ideas about your expectations for the course....

- 1) Eat donuts each class
- 2)
- 3)
- 4)

13

Now share your list with your neighbour for a few minutes.

Are your expectations the same as theirs?

14

Now here are some of my ideas about my expectations for the course....

- 1)
- 2)
- 3)
- 4)

15

Now here are some of my ideas about my expectations for the course....

- 1) Safe Classroom
- 2)
- 3)
- 4)

16

Now here are some of my ideas about my expectations for the course....

- 1) Safe Classroom
- 2) Restraint
- 3)
- 4)

17

Now here are some of my ideas about my expectations for the course....

- 1) Safe Classroom
- 2) Restraint
- 3) Ontario 1-8 Curriculum
- 4)

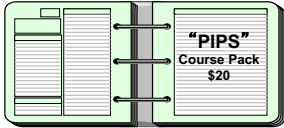
18

Now here are some of my ideas about my expectations for the course....

- 1) Safe Classroom
- 2) Restraint
- 3) Ontario 1-8 Curriculum
- 4) Have Some Fun Together

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Text / Workbook:
**“Powerful Ideas
in
Physical Science”**



The image shows a binder with three rings. The cover of the binder is labeled "PIPS Course Pack \$20".


20

"PIPS" presents **Case Studies** that will

21

"PIPS" presents **Case Studies** that will

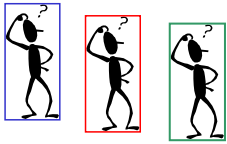
- clarify things you already know



22

"PIPS" presents **Case Studies** that will


- clarify things you already know
- reveal differences among the class



23

"PIPS" presents **Case Studies** that will


- clarify things you already know
- reveal differences among the class
- get you to predict outcomes



24

“PIPS” presents Case Studies that will


- clarify things you already know
- reveal differences among the class
- get you to predict outcomes
- lead you to experiment and discover



25

“PIPS” presents Case Studies that will

- clarify things you already know
- reveal differences among the class
- get you to predict outcomes
- lead you to experiment and discover
- document what you have discovered



26

“PIPS” presents Case Studies that will

- clarify things you already know
- reveal differences among the class
- get you to predict outcomes
- lead you to experiment and discover
- document what you have discovered
- examine scientific learning processes

27

“PIPS ...

- a) elicits students' existing notions in writing and in groups.
- b) presents *disequilibrating experiences* which prompt reexaminations and reevaluations of existing notions.
- c) engages students in carefully designed collaborative activities.
- d) leads students to constructing their own new notions and improved conceptual understanding. "

Source: "PIPS instructor' s guide"

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Engaged Learning in.....

- Light & Colour
- Electricity
- Motion
- Pulleys, Levers and Gears

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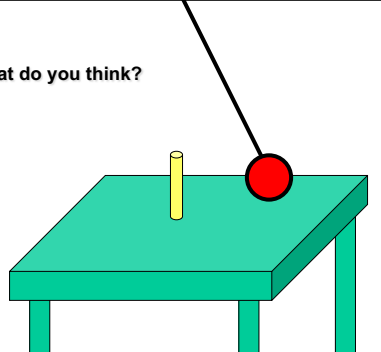
Let's examine an example taken from.....

- Light & Colour
- Electricity
- **Motion**
- Pulleys, Levers and Gears



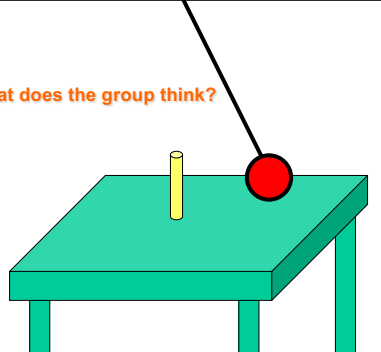
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What do you think?

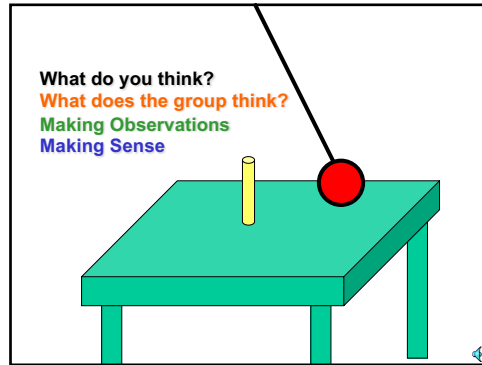


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What does the group think?



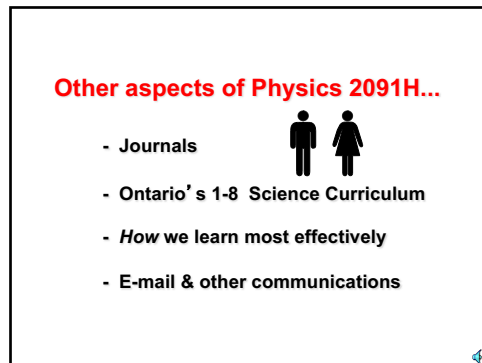
32



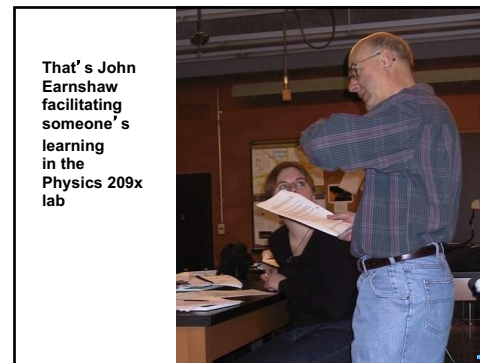
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35



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Your tasks before the next class:

- Get your "[trentu.ca](https://www.trentu.ca)" accounts activated and complete the myLearningSystem demographics survey.
nb: If you wish to use another e-mail address, set your "[trentu.ca](https://www.trentu.ca)" e-mail to be automatically forwarded.

37

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If you had an account previously,
but have not used it recently,
you may have to logon to

<https://www.trentu.ca/mytrent/activate.php>

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Your tasks before the next class:

- Get your "[trentu.ca](https://www.trentu.ca)" accounts activated and complete the myLearningSystem demographics survey
- Upload a short computer file to myLearningSystem with a one sentence description of "constructivist learning" and the meaning of the word "pedagogy".

With SafeAssign

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Your tasks before the next class:

- Get your "[trentu.ca](https://www.trentu.ca)" accounts activated and complete the myLearningSystem demographics survey.
- Upload a short computer file to myLearningSystem with a one sentence description of "constructivist learning" and the meaning of the word "pedagogy".
- Send me a short e-mail message (under 100 words, with "Physics 2091H Intro" in the subject line) from your [trentu.ca](https://www.trentu.ca) email account introducing yourself, and telling me your expectations for the course. (Do this soon, but at least a day before your next class.)

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- Send me a **short e-mail message** from your trentu.ca email account introducing yourself, and telling me your expectations for the course.
- Post a message in the online class discussion forum.
(Use the topic "Homework 01/Assignment 0" in the category "Homework and Assignments". Make it under 100 words, with the subject "HW01 - Intro Messages". Include something interesting - maybe your favourite cookie recipe.)

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- Look at the online "Academic Skills Tool Kit" resources

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- Look at the online "Academic Skills Tool Kit" resources
- Look at Assignment #1.

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PHYSICS 2091H...**"constructivist learning"** by
"engaged interactions"Get your network ID at <https://www.trentu.ca/mytrent/activate.php>My name is Johann Beda
My e-mail address is jbeda@trentu.caThe course WEB page is at:
<http://www.beda.ca/johann/trentu/PHYS209x/>
<http://www.trentu.ca/mytrent/>

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