

2013年度関西英語教育学会研究大会企画ワークショップ

International Prelude: Science English at Kakogawa Higashi High School

兵庫県立加古川東高等学校
教諭 辻 祐子
ALT Jennifer Saunders

2013年6月8日（土）関西国際大学尼崎キャンパス

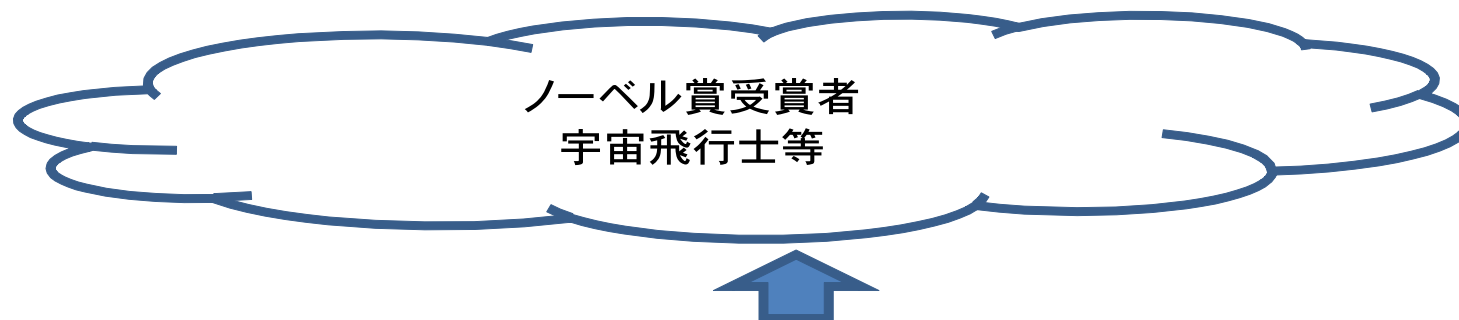
スーパーサイエンスハイスクール (SSH)

- 文部科学省が、科学技術，理科数学教育を重点的に行う学校を指定して，将来の国際的な科学技術系人材の育成のための取り組みを推進する事業
- 平成25年度指定校 201校
- グローバル人材の育成
→ 英語の果たす役割が大きくなっている

加古川東高校のSSH

第1期：平成18年度～23年度
「KAKOから未来へ」

第2期：平成24年度～28年度
「Challenge The World」



「Challenge The World」
グローバルな視点を持ち、人類の将来に貢献する科学者としての素養を
身につけた人材の育成

3年	課題研究+ 自然科学部 (国内外の高校・大学との共同研究等)				
2年	課題研究+ 自然科学部 (国内外の高校・大学との共同研究等)			* 理数英語 Ⅱ	* 理数国語 Ⅱ △ 理数英語 プレゼンテー ション
1年	自然科学部 (国内外の先端科学施設 での研修等)	△ 自然科学 基礎演習	科学倫理	* 理数英語 Ⅰ	* 理数国語 Ⅰ * 統計学

* の科目は平成25年度から開講予定

△ の科目は名称変更

理数英語プレゼンテーション (Science English Presentation)

- 情報の代替科目
- 週1時間
- ティームティーチング
 - ー英語科教員2名
 - ーALT
 - ー理科教員
 - ー情報科教員



- 目的

(1) 科学に関するトピックについて、パワーポイントを用いて、英語でプレゼンテーションができるようになる。

(2) 発表された内容に関して、英語で質疑応答ができるようになる。

(3) 情報器機を効果的に用いて必要な情報を集め、適切に処理できるようになる。

● 授業計画

4月～5月 ディベート

6月～7月 プレゼンテーションⅠ

(『英語対訳で読む科学の疑問』実業之日本社より)

9月～10月 プレゼンテーションⅡ

(絶滅危惧種)

11月 外国人研究員による講義

12月～3月 「英語による課題研究発表会」

準備

3月19日頃 「英語による
課題研究発表会」



課題研究とは

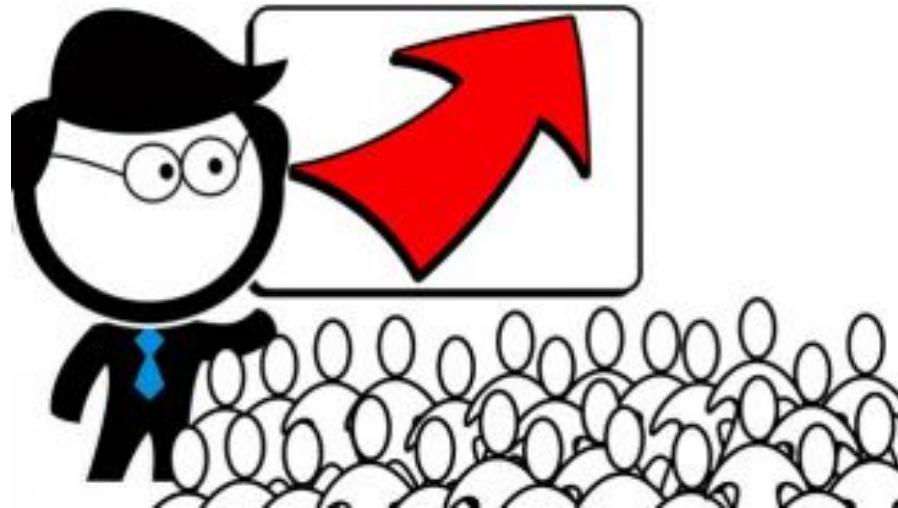
- 理数科2年生40名が数班に分かれ、自分たちで決めたテーマについて、教員や地域アドバイザーの指導のもと研究活動を行う。週2時間。
- スケジュール
 - 4月より本格開始
 - 9月 中間発表会（日本語）
 - 1月 クラス内発表会（日本語アブストラクトのみ英語）
 - 2月上旬 SSH発表会（日本語アブストラクトのみ英語）
 - 2月中旬 論文作成（日本語アブストラクトのみ英語）
 - 3月19日頃 英語による課題研究発表会
 - 3年生 4月～7月 論文作成（英語）

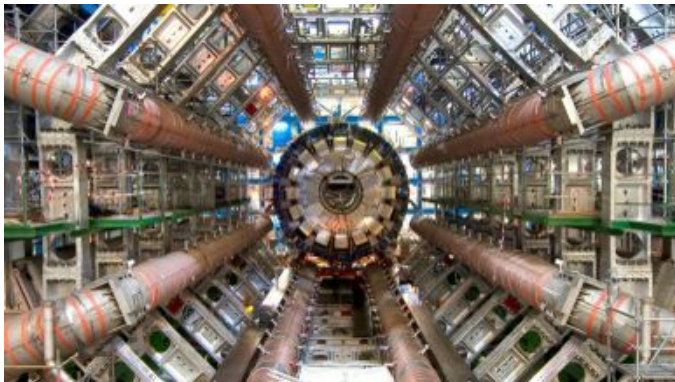
2013年3月19日 英語による課題研究発表会



International Prelude

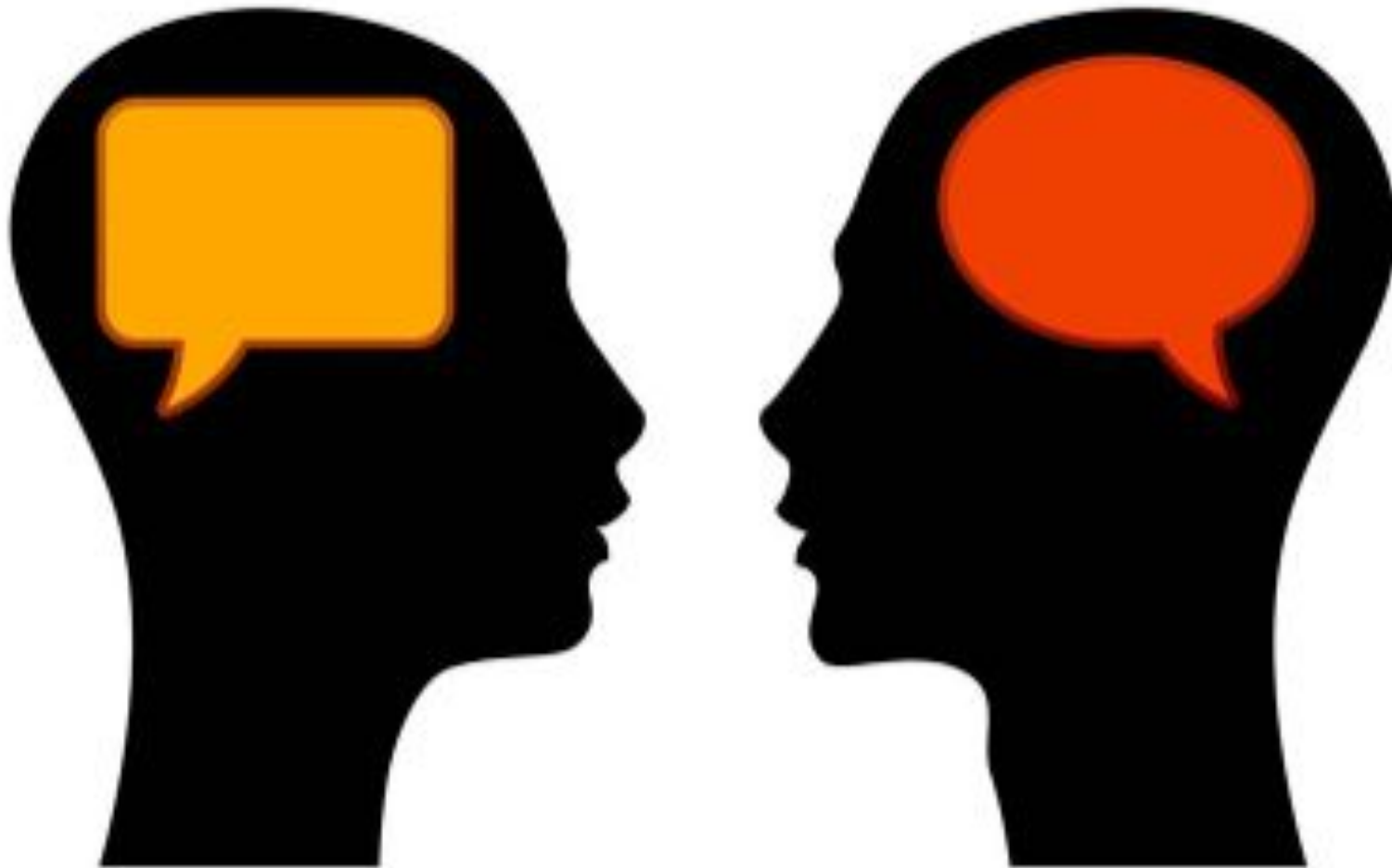
How to Teach Students how to
Communicate Science







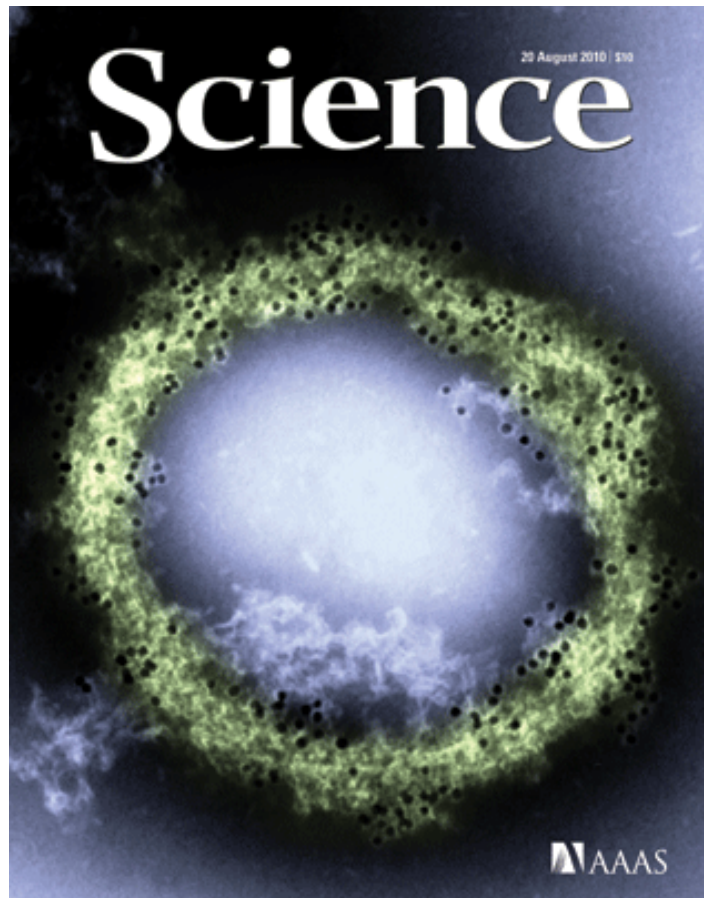
COMMUNICATION



What's the point of doing great work



if you can't communicate it?



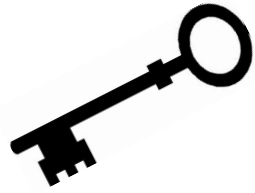
How do we
help students
share complex
scientific
information?



Many surely feel
like this...

the way plants grow. Some wild animals also fall victim to light pollution. In the United States, the International Dark-Sky Association has been trying to solve the light pollution problem. As the city grows over the years and artificial lights increased, it became difficult to see the Milky Way. The artificial light from the streets and buildings is reflected on dust or drops of water in the air. As a result, the sky is filled with too much light to see the stars. Light pollution can disturb the way plants grow. Some wild animals also fall victim to light pollution. In the United States, the International Dark-Sky Association has been trying to solve the light pollution problem.

1st



:

KISS

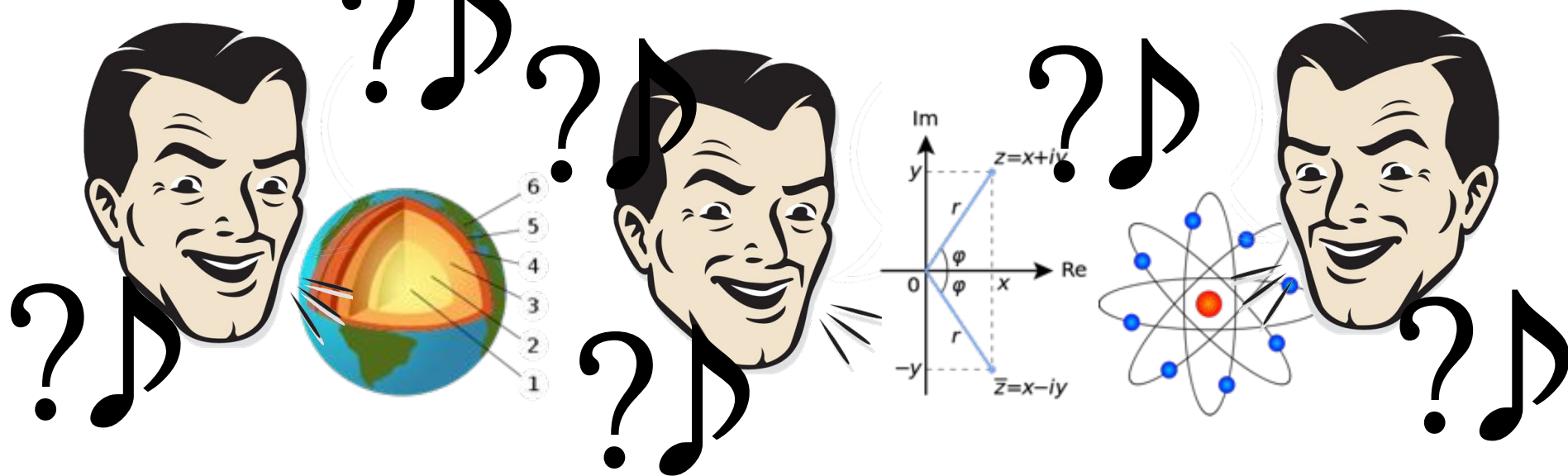


Keep It

Simple, Silly



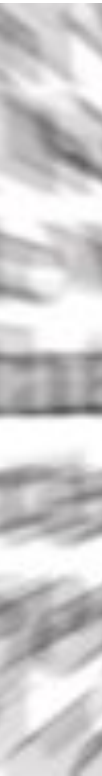
JARGON



Simple is better!

It's more important to get the **message** across, not impress others with vocabulary.

Clearly define scientific terms



Redundancy



REDUNDANCY
Never too much of a good thing!



I wanted to do research on spotted owls because I wanted to know their present situation. So, I researched the present situation of spotted owls.



I wanted to do research on spotted owls because I wanted to know their present situation. So, I researched the present situation of spotted owls.

Is there something we can do without?



I wanted to do research on spotted owls because I wanted to know their present situation. So, I researched the present situation of spotted owls.



I wanted to do research on spotted owls because I wanted to know their present situation.



I wanted to do research
on spotted owls because I
wanted to know their
present situation.

Can we make this sentence shorter?



I ~~wanted to do~~ research
on spotted owls because I
wanted to know their
present situation.

Can we make this sentence shorter?



I ~~wanted to do~~ research
on spotted owls because I
wanted to know their
present situation.

Now, how do we make the sentence
correct?



I ~~wanted to do~~ research~~ed~~
~~on~~ spotted owls because I
wanted to know their
present situation.

Now, how do we make the sentence
correct?



I researched spotted owls because I wanted to know their present situation.



I researched spotted owls
~~because I wanted to know~~
their present situation.



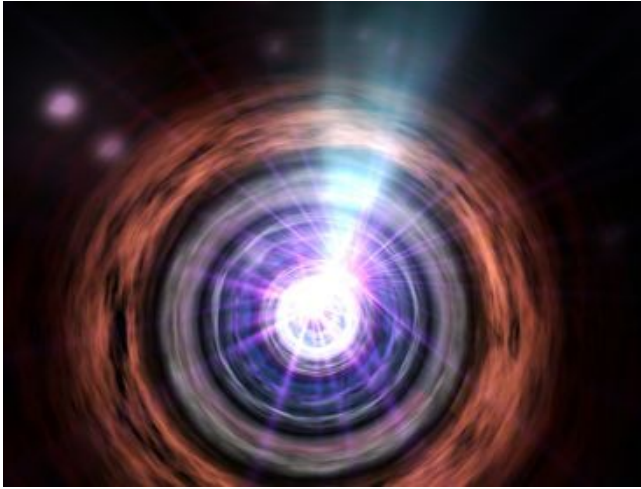
I researched spotted owls
~~because I wanted to~~ know
their present situation.



I researched spotted owls to learn their present situation.

Exercise Time!





Redundancy Exercises

1. Astronomers have just discovered a new discovery of what they believe to be the second largest black hole ever found.



Redundancy Exercises

1. Astronomers have just discovered ~~a new discovery of~~ what they believe to be the second largest black hole ever found.



Redundancy Exercises

1. Astronomers have just discovered ~~a new discovery of~~ what they believe to be the second largest black hole ever found.
2. The reason we researched killifish is because we were shocked to learn that they are endangered.



Redundancy Exercises

1. Astronomers have just discovered ~~a new discovery of~~ what they believe to be the second largest black hole ever found.
2. ~~The reason we~~ researched killifish ~~is~~ because we were shocked to learn that they are endangered.



Redundancy Exercises

1. Astronomers have just discovered ~~a new discovery of~~ what they believe to be the second largest black hole ever found.
2. ~~The reason we~~ researched killifish ~~is~~ because we were shocked to learn that they are endangered.
3. The melting of polar ice has added 11mm to global sea levels over the past two decades, raising sea level height.



Redundancy Exercises

1. Astronomers have just discovered ~~a new discovery of~~ what they believe to be the second largest black hole ever found.
2. ~~The reason we~~ researched killifish ~~is~~ because we were shocked to learn that they are endangered.
3. The melting of polar ice has added 11mm to global sea levels over the past two decades, ~~raising sea level height.~~

Be concise!

“to the
point”



Being clear is more
important than using a lot
of English words!

Wordy: Any particular type of dessert is fine with me. (9 words)

Concise: Any dessert is fine with me. (6 words)



Ask yourself:

“What is my
main **message**?”



And then...

And then...

“Get to
the point”





Aurora Borealis

The aurora borealis (the Northern Lights) and the aurora australis (the Southern Lights) have always fascinated mankind, and people even travel thousands of miles just to see the brilliant light shows in the earth's atmosphere. The auroras, both surrounding the north magnetic pole (aurora borealis) and south magnetic pole (aurora australis) occur when highly charged electrons from the solar wind interact with elements in the earth's atmosphere. Solar winds stream away from the sun at speeds of about 1 million miles per hour. When they reach the earth, some 40 hours after leaving the sun, they follow the lines of magnetic force generated by the earth's core and flow through the magnetosphere, a teardrop-shaped area of highly charged electrical and magnetic fields.

Aurora Borealis

The aurora borealis (the Northern Lights) and the aurora australis (the Southern Lights) have always fascinated mankind, and people even travel thousands of miles just to see the brilliant light shows in the earth's atmosphere. The auroras, both surrounding the north magnetic pole (aurora borealis) and south magnetic pole (aurora australis), occur when highly charged electrons from the solar wind interact with elements in the earth's atmosphere. Solar wind streams away from the sun at speeds of about 1 million miles per hour. When they reach the earth, some 40 hours after leaving the sun, they follow the lines of magnetic force generated by the earth's core and flow through the magnetosphere, a teardrop-shaped area of highly charged electrical and magnetic fields.

Aurora Borealis



- A natural phenomenon that occurs when highly charged electrons from the solar wind interact with elements in the earth's atmosphere, exciting them.
- When the excited elements return to a normal state, they give off light.
- Also called the “Northern Lights”

It's better.....

...but...

We can do even better...

Aurora Borealis



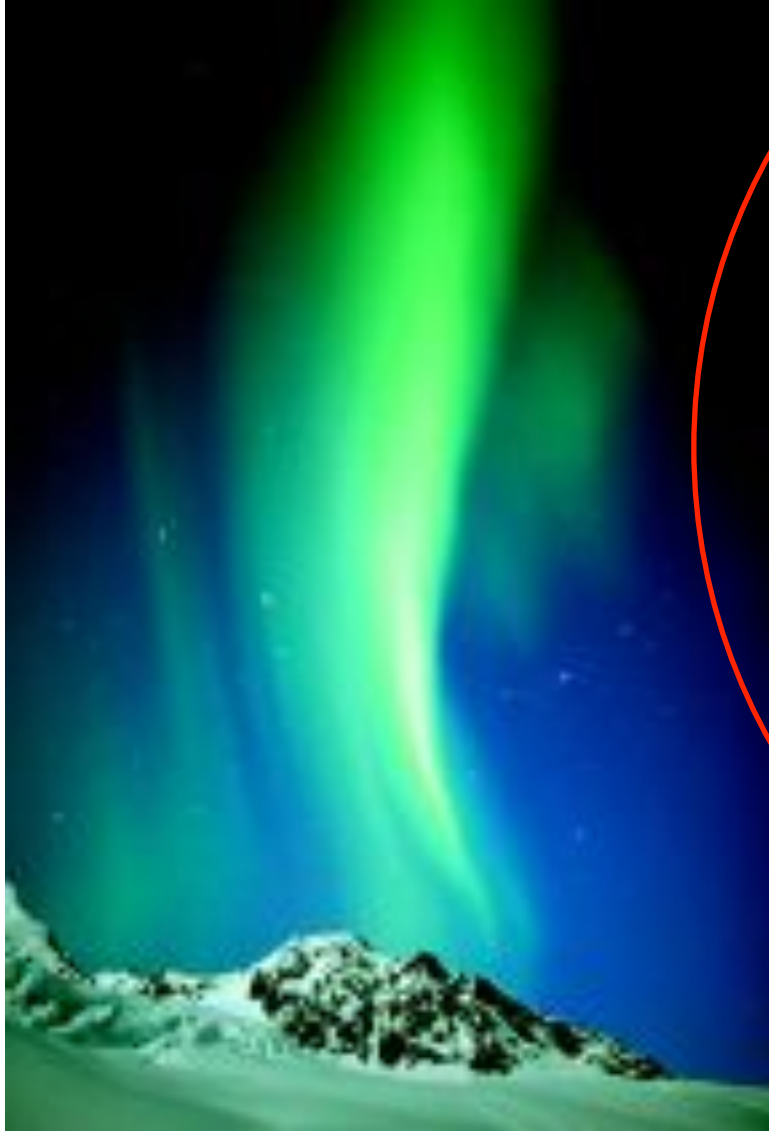
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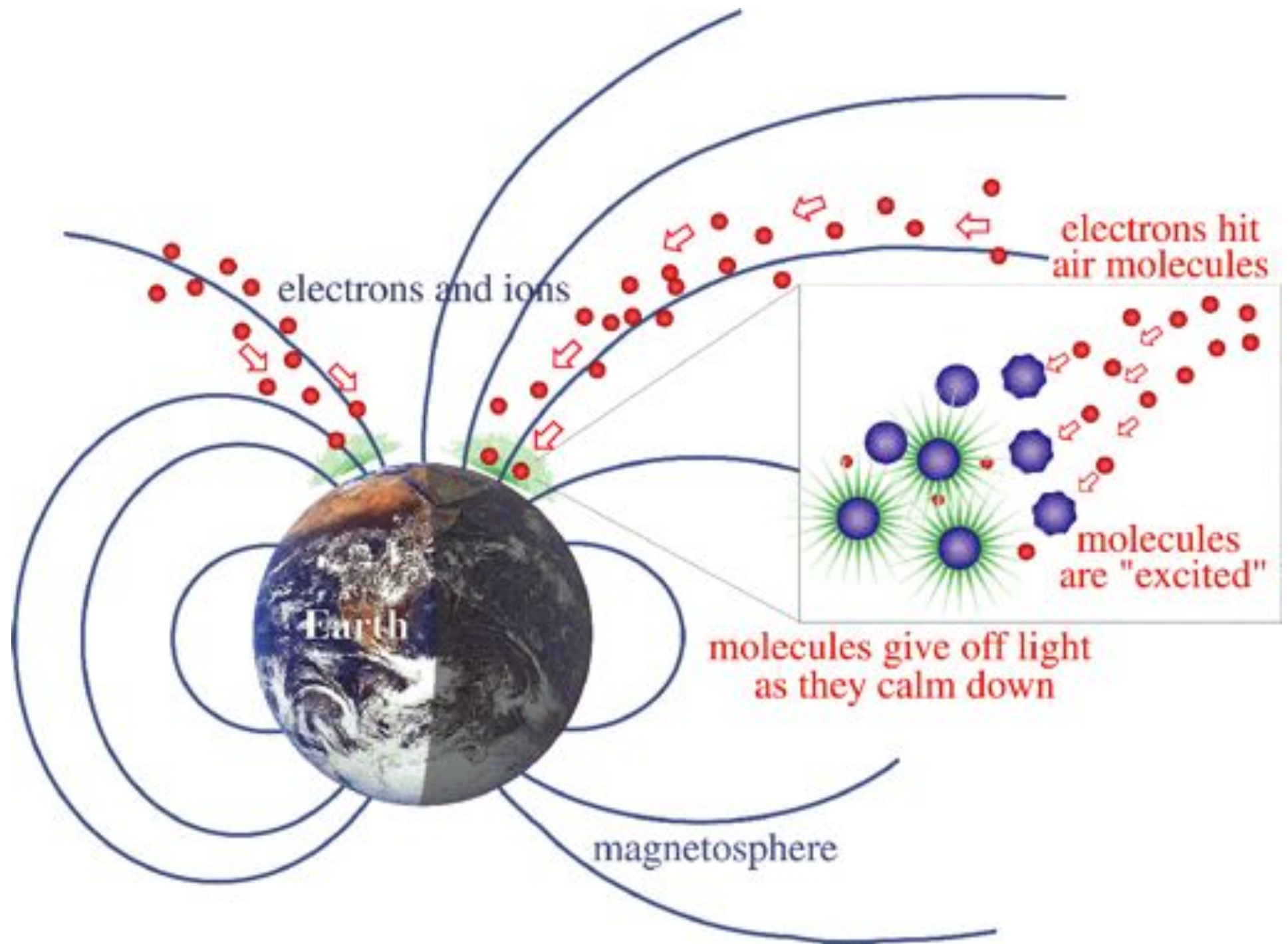
Aurora Borealis

- Natural light display in the night sky
- “Northern Lights”

Aurora Borealis



- A natural phenomenon that occurs when highly charged electrons from the solar wind interact with elements in the earth's atmosphere, exciting them.
- When the excited elements return to a normal state, they give off light.
- Also called the “Northern Lights”

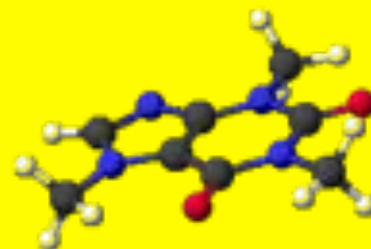
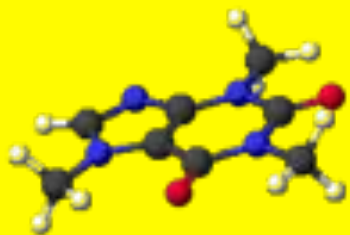




Visuals are
great for
understanding.

Color can also be
used for emphasis.

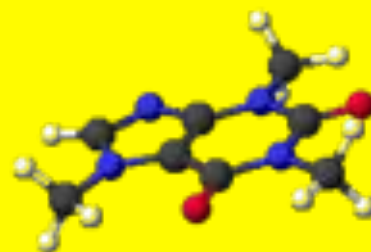
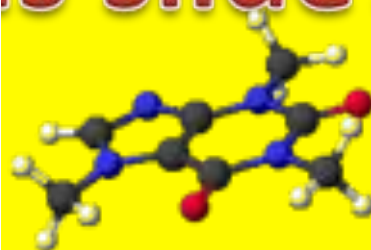
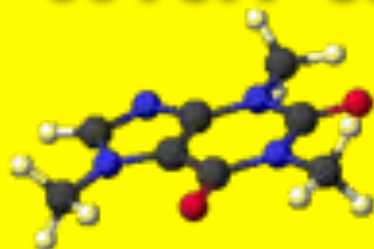
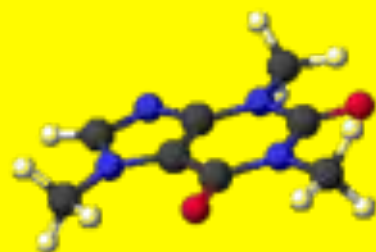
However.....



This is a
PRESENTATION!!!

I am saying something
important!

However, what is wrong
with this slide?



KISS



Keep It

Simple, Silly

So, how do you give a good presentation?



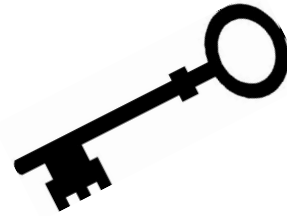
First, let us show you an example...

Tips to Give a Good Presentation

- You want to get your audience's attention
- You can help get your audience's attention by speaking in a loud enough voice
- Start off well – You want to make sure you give a good first impression
- End well – You want to leave your audience with one or two good key points to remember

What did
you think?



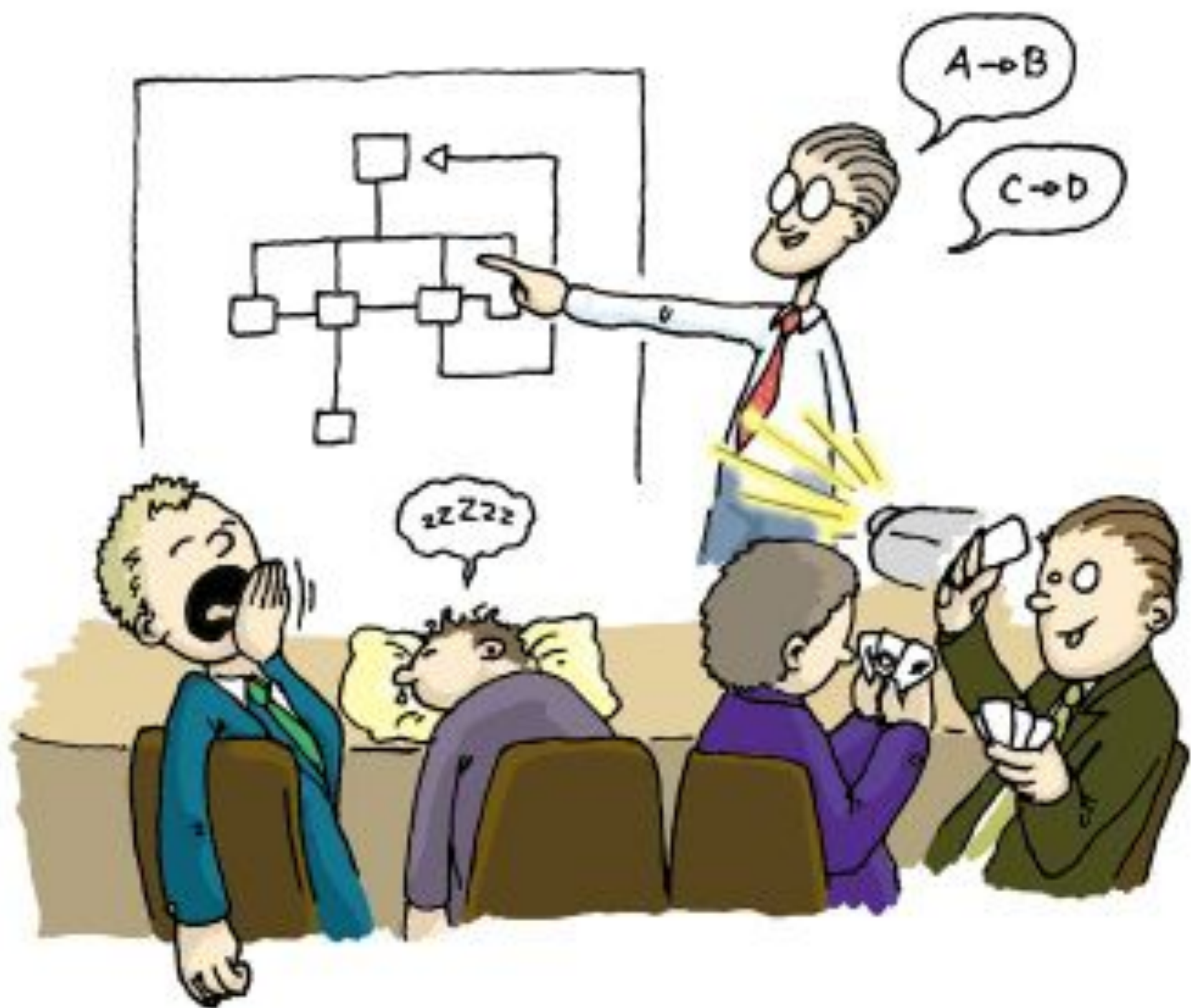


2nd Key Point:

Get the audience's

ATTENTION





How ?

Make eye contact 

 **SPEAK UP**
(Use a loud voice)

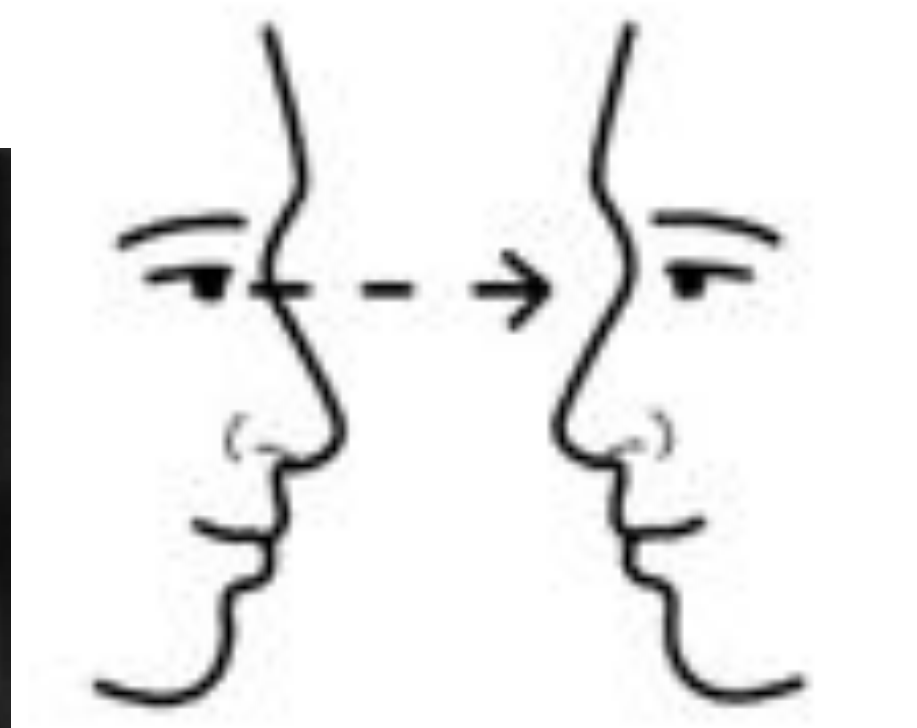


Use gestures

Exercise Time!



Eye Contact



3 Seconds



Hello, my name is
_____. It's nice to
see you.

It's nice to see you too.
My name is _____.





3rd Key Point:

Confidence

Yet, how can we help our
students (and ourselves) gain
confidence?

2 minute
exercise





Amy Cuddy,
Social Psychologist
and Professor at
Harvard Business
School



Body Language



Body
language
says a lot
about
someone









Our body language influences
how other people think and
feel about us

Can our body language
influence how we think and
feel about ourselves?



Can our bodies change
our minds?

Testosterone



Power
hormone

Cortisol



Stress
hormone

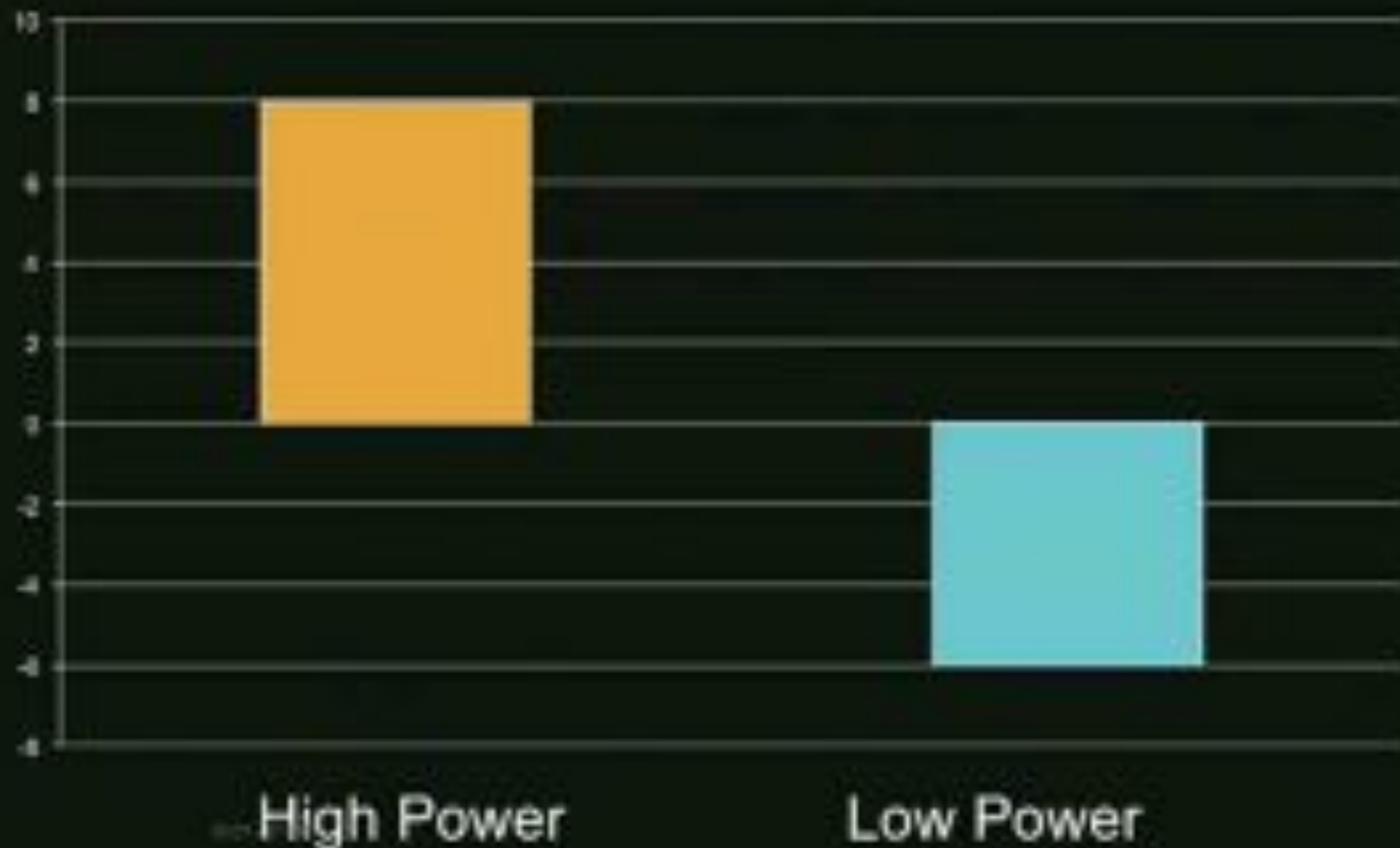
High power poses



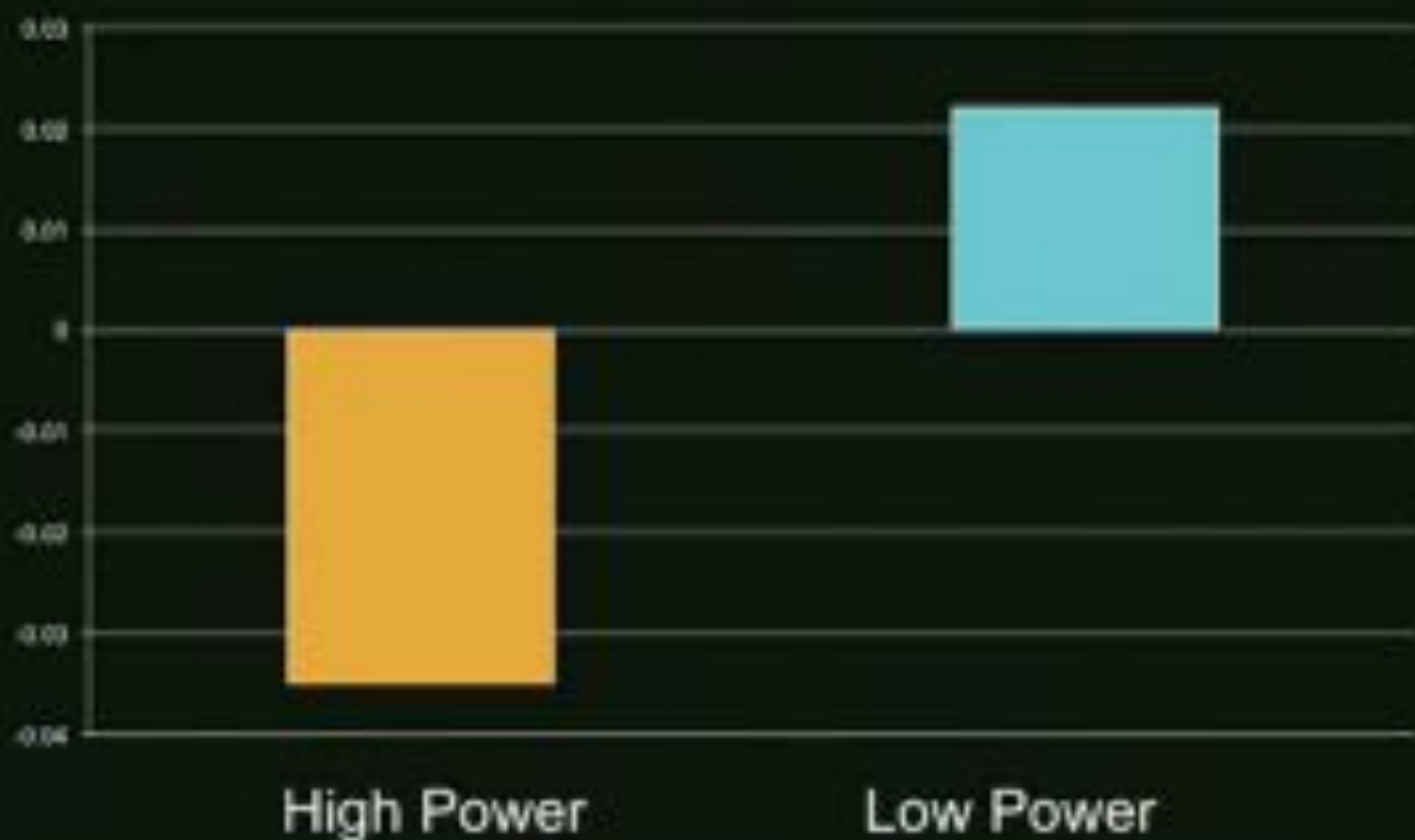
Low power poses



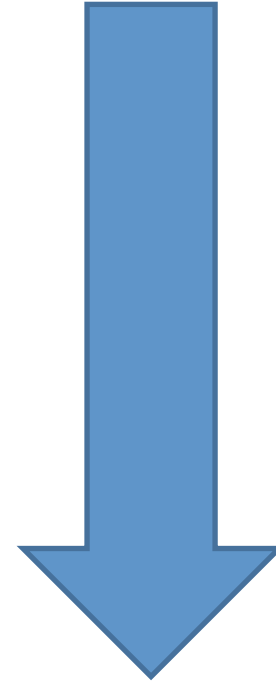
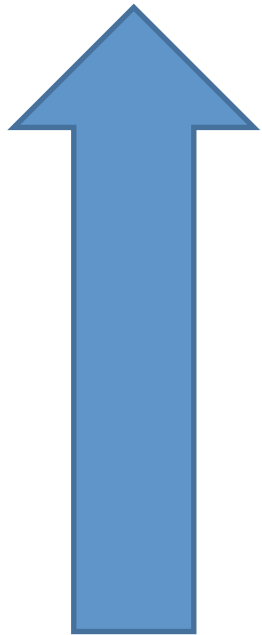
Testosterone Change (pg/ml)



Cortisol Change (pg/ml)



Testosterone
(Power)



Cortisol
(Stress)

“Fake it until you make it”



Try a
Power
Pose

Thank you
all for
being here
today.



Challenge Time!



Challenge Time!

Make a short presentation
describing

what light pollution is
using the slides provided.

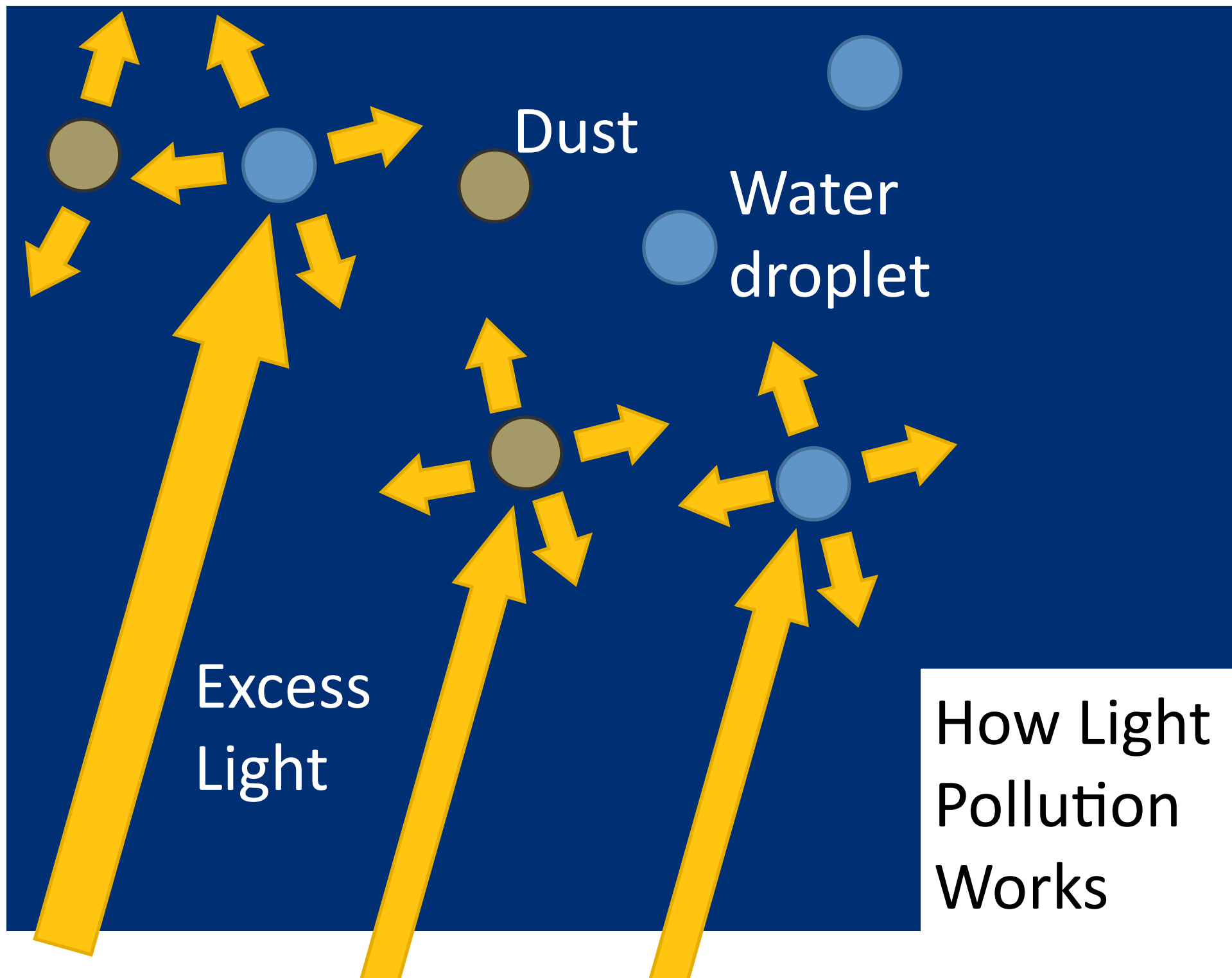
Light Pollution



Light Pollution

Artificial light that is allowed to illuminate areas not intended to be lit





Dust

Water
droplet

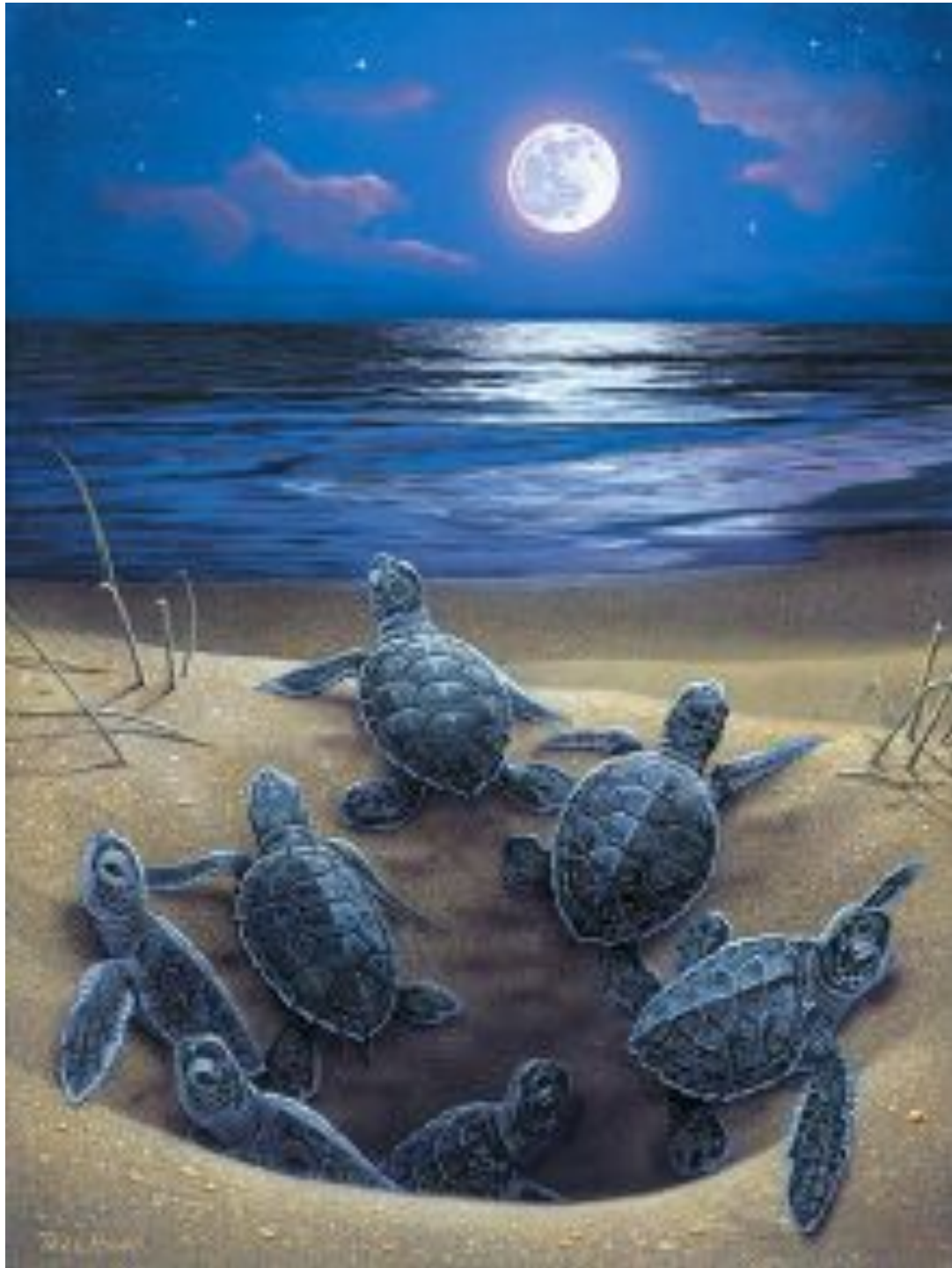
Excess
Light

How Light
Pollution
Works





Light pollution can disturb the way plants grow



Light
pollution
can disturb
wildlife



Light pollution can disturb humans

What can
we do?



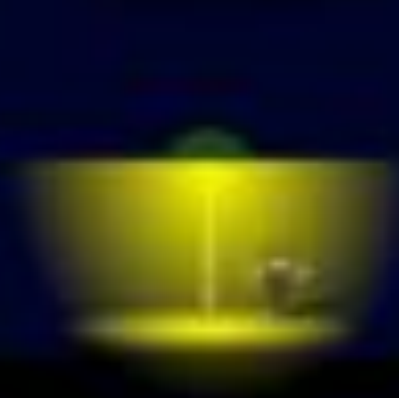


very bad

bad

better

best



Thank-you for listening!

For more information, please contact:

The International Dark Sky
Association

www.darksky.org

How did
you feel?

You're invited!

Research Presentation Conference in English

May 18th, 2014

Kakogawa Higashi Senior High School

For details, please contact:

YTsuji@hyogo-c.ed.jp

Or Jennifer.M.Saunders@gmail.com