Don’t copy!

Why is the sky blue?

The molecules in the air scatter blue light from the sun more than they scatter red light, so the sky looks blue. The wavelength determines the nature of light.

(Student paper)

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A clear cloudless day-time sky is blue because molecules in the air scatter blue light from the sun more than they scatter red light. When we look toward the sun at sunset, we see red and orange colours because the blue light has been scattered out and away from the line of sight.

(Gibbs 1997)

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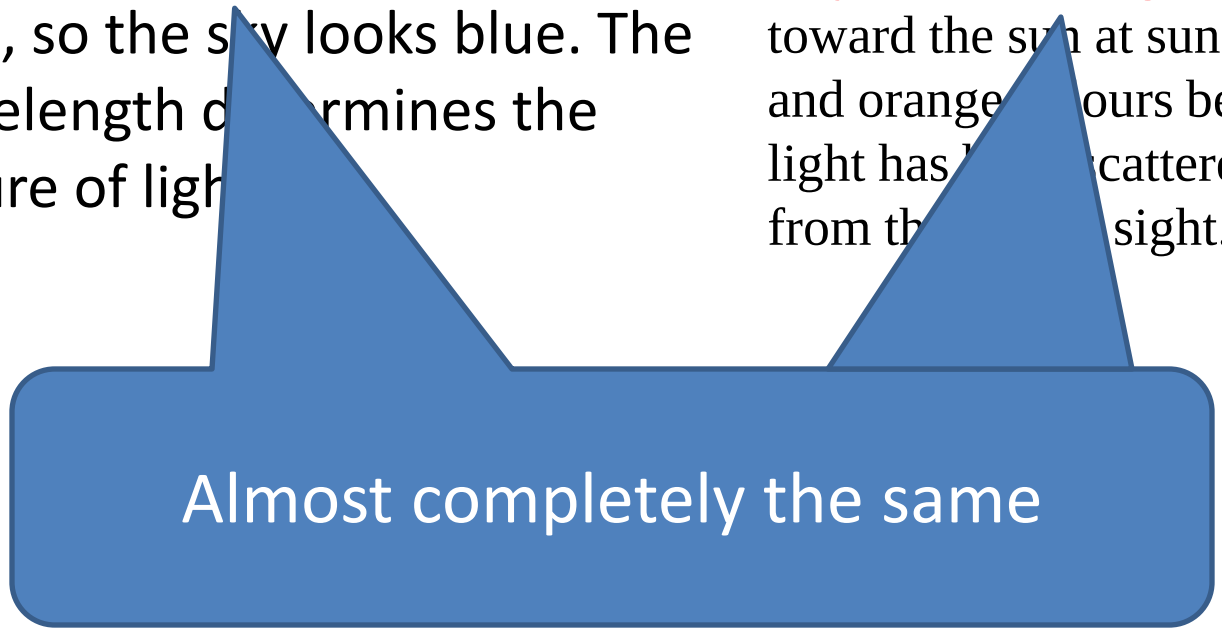

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Tiny bit different

Don’t copy!

- DO NOT copy entire sentences.
- DO NOT copy most of a sentence.

  (about 4 words or more)
- DO name your source ALWAYS.
- DO use quotation marks if you are quoting.

Don’t copy!

Quotation marks

Source

“Why is the sky

Phillip Gibbs, 1997

Why is the sky blue?

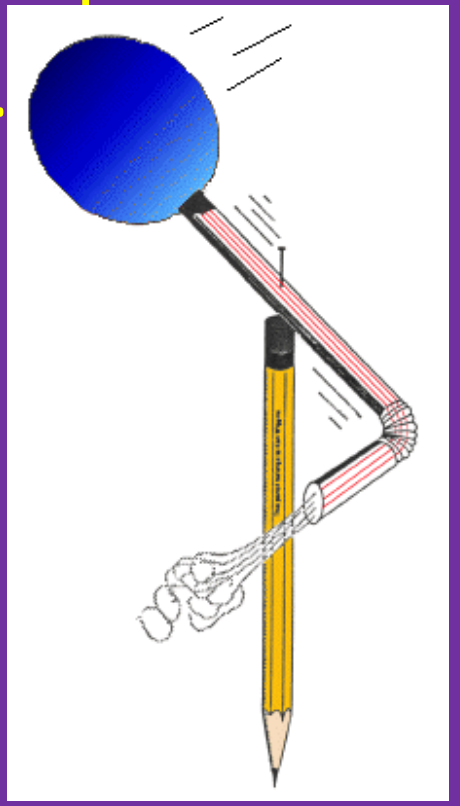
A clear cloudless day-time sky is blue because molecules in the air scatter blue light from the sun more than they scatter red light. When we look toward the sun at sunset, we see red and orange colours because the blue light has been scattered out and away from the line of sight.

The sky looks blue because air molecules makes light wavelengths scatter, and blue light scatters more than red light does.

A few of the same words, not in the same order

Rockets

- Take a pencil, a balloon, a straw, and a pin.
- Attach the balloon to the straw with tape.
- Pin the straw to the pencil as shown.
- What do you predict will happen when air leaves the balloon?



- Read the Discussion questions and talk about the answers.

https://spaceflightsystems.grc.nasa.gov/education/rocket/TRCRocket/rocket_pinwheel.html

Academic English – Intermediate

Rockets – Discussion questions

After you make a rocket pinwheel, discuss these questions with your group. If you can't figure out the answer, ask another group to help you.

1. Newton's third law says, "Every action has an opposite and equal reaction." The action of the balloon pushes out air. What reaction does this cause? *In what sense is the reaction "equal" to the action? *In what sense is the reaction "opposite" to the action?

2. For many years people believed that space travel was impossible because there was nothing that vehicles could push against in space in order to provide propulsion. *How are rockets able to accelerate in space without pushing against anything?

3. In the pinwheel, you put gas (air) into the balloon by blowing on the straw. *Where does the gas come from in a rocket or missile? How is fuel for rockets in space different from ones in the atmosphere?

How does bending the straw affect the rocket pinwheel? How would changing the direction of the straw affect the motion of the pinwheel? Would the motion change if the straw were straight? Try it out. You may remove the pin from the straw, but ***please*** **be careful**. Make sure your rocket doesn't hurt anyone.

Rockets

- The balloon action pushes out the air. What reaction does this cause?
  - The straw spins in the opposite direction with force equal to the force of the moving air.
- How are rockets able to accelerate in space?
  - They move in the opposite direction of exhaust. They don't have to push against anything.
- Where does gas come from in a rocket?
  - Burning fuel expands.

Unity & Coherence

- Unity: One idea
  - An essay or report has **one** main idea (*topic, thesis*)
  - Every part of the writing relates to that topic.

- Coherence: Staying together
  - Every part of the writing relates to the part before.
  - Sentences relate to sentences; paragraphs to paragraphs.

Unity

- An essay or report has one general idea.

  The color of the sky is an effect of light scattering into different wavelengths.

- Each paragraph in the essay has one specific idea.

1. During the day, the sky looks blue because blue light scatters more than other wavelengths.
2. At sunset we see red or orange because the scattered blue light doesn't reach our eyes.

Unity

- If your topic is, “the sky looks blue during the day”
  - Write about why the sky looks blue
  - Write about how light scatters
  - DO NOT write about red skies at sunset
  - DO NOT write why clouds look white or grey
  - DO NOT write about other things that are blue

Example

During the day, the sky looks blue because blue light scatters more than other wavelengths. Light consists of a range of wavelengths between 390-700 nanometers. Air molecules in the atmosphere split sunlight into different wavelengths. Shorter wavelengths scatter more, while longer wavelengths scatter less. Yellow wavelengths longer than 570 nm make efficient street lights because they do not scatter. Blue wavelengths, between about 440 and 490 nm, scatter all across the sky, making the daytime sky appear blue.

Example

During the day, the sky looks blue because blue light scatters more than other wave

wavelengths between

atmosphere split sun

wavelengths scatter more, whi ger wavelengths scatter less. Yellow wavelengths longer than 570 nm make efficient street lights because they do not scatter. Blue wavelengths, between about 440 and 490 nm, scatter all across the sky, making the daytime sky appear blue.

This sentence is not about the blue sky.

Remove it.

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Coherence

- Relate each sentence to the sentence before it.
- Relate each paragraph to the paragraph before it.
  - Logical order
  - Transition signals
  - Consistent tense
  - Repeat key words

Coherence: Logical order

- **Order by time**: Good for events, things that happened or things that happen.
  - Narratives or processes
  - First thing first, second thing second, etc.
  - Transition signals related to time or relative order.

Coherence: Logical order

Follow these six steps to use a Bunsen burner.

1. Check for safety.
2. Close all vents on the burner.
3. Light a match and hold it to the burner.
4. Turn on the gas to light the burner.
5. Adjust the vents until a blue luminous flame appears.
6. Turn off the burner by closing all vents and then turning off the gas.

Coherence: Logical order

- **Order by similar ideas**: groups of things that are similar

  - There may be many ways to divide the ideas.
  - It doesn't matter which group is first. You decide.
  - Write all your ideas about one group first, then all about another group.
  - Use transition signals when you change groups.

Coherence: Logical order

Feeding chili pepper to rats reduced weight gain.

1. Rats were fed chili pepper for eight weeks.
   A. Fed a high-fat diet
   B. Also fed chili
   C. Gained an average 90 grams
2. Control rats were not fed chili pepper.
   A. Fed a high-fat diet
   B. No chili added
   C. Gained an average 98 grams
3. Adding chili to a high-fat diet reduced rats' weight gain.

Coherence: Transition signals

- Words or phrases that show the relationship between ideas
  - **Examples** of ideas or concepts
  - **Additional** ideas or **Agreement** between ideas
  - **Contrasting** ideas or **Disagreement**
  - **Result** of some **cause** (or **Reason** for some **effect**)
  - **Conclusion** of your paragraph or a section

Coherence: Consistent tense

- If you are writing about something that happened in the past, usually you will use past tense (過去形).
- General processes or description often use present tense (現在形).
- Whatever tense you choose, **be consistent**. Every time you write about the same time, use the same tense.

Coherence: Consistent tense

English class (starts / started) the same way every week. First, Dr. Nilep (calls / called) the roll. While he (does / did) that, we (take / took) a plastic card. Then Dr. Nilep (tells / told) us to find a group. With our group, we (discuss / discussed) our textbook exercises. After that, we (do / did) some science experriment. Then Dr. Nilep (lectures / lectured) about writing.

Either present tense or past tense is OK. But whichever you choose, be consistent. If you chose “starts”, then choose all present tense. If you chose “started”, then all the verbs should be past tense.

Coherence: Repeat key words

- Key words – words that name ideas related to your topic – should be repeated.
- How often to repeat the key words is up to you. There is no exact number.
- If it is possible for the reader to become confused, repeat the key word instead of using a pronoun or leaving it out.

Coherence: Repeat key words

Many people think that robots are machines that look and act like people. Those are called "humanoid". But they are not very common.
Millions of them are used in factories, work places, and even homes. But they don't act like humans. They often do simple tasks like putting together machine parts. Newer ones can do complicated tasks like mapping places humans can't reach. There is even one called Paro that helps people with dementia.

Coherence: Repeat key words

Many people think that robots are machines that look and act like people. Those are called humanoid robots. But humanoid robots are not very common. Millions of robots are used in factories, work places, and even homes. But most robots don't act like humans. Industrial robots often do simple tasks like putting together machine parts. Newer robots can do complicated tasks like mapping places humans can't reach. There is even a robot called Paro that helps people with dementia.

Unity and coherence

- Make your writing unified. Make sure every part relates to the main topic.
- Make your writing coherent. Show how each part relates to the other parts.
  - Use a logical order.
  - Add transition signals.
  - Use consistent verb tense.
  - Repeat key words.

Paper 2

- Choose one class topic.
  - *–Any topic, except the one you chose for Paper 1*

- Write a lab report *or* an essay.
  - One or two pages
  - Maximum 5 points for English
    - topic sentence, unity, coherence, etc.
  - Maximum 5 points for science
    - clear purpose & conclusion, enough evidence, etc.