



CLIL for Grade 10 – Science

Name: _____

Section: _____

Theme: Understanding Flight Routes

Content Area: Science

Content Focus: How Earth's shape and atmosphere affect flight path

Communication: Vocabulary

Common words

route (N) - path
descend (V) – go down
detour (V) – change path

Technical words

Air Current	Jet Streams	Tropopause
Altitude	Latitude	
Earth Curvature	Turbulence	

Grammar

Effect (Noun) vs. Affect (Verb)

1. The *effect* of strong turbulence is devastating to passengers.
2. Air current *affects* the flight of a plane.

Direct Speech vs. Indirect (Reported) Speech

1. "Do you speak English?"
2. He asked me whether/if I spoke English.

Language functions

Describing cause and effect	Giving short presentations
Narrating using reported speech	

Cognition: Explaining the factors affecting flight paths using graphics

Culture: Why you shouldn't utter the word "bomb" when you're at the airport or on the plane?

Number of Lessons: Two

Note: Wait for your teacher's instructions on how to complete the activities.



LESSON 1

Class Activity

1. Watch a video presentation on “Why Planes Don't Fly Over the Pacific Ocean.” Video link: https://www.youtube.com/watch?v=00AT5h_sOQM&t=339s or type “Why Planes Don't Fly Over the Pacific Ocean” on YouTube.
2. Take down notes of any information about the words on the blank provided below.

Air Current

Altitude

Earth Curvature

Jet Streams

Latitude

Turbulence

Pair Work Activity

3. Discuss with your classmate how do the terms (words) above affect flight path.

**Individual Work Activity**

4. Complete the crossword puzzle using the words below as clues.

Common words

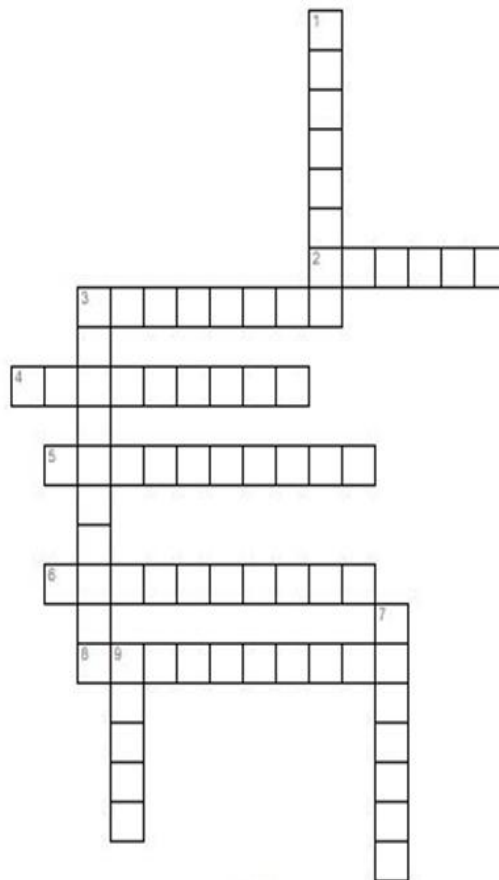
route (N) - path
descend (V) – go down
detour (V) – change path

Technical words

Air Current	Jet Streams	Tropopause
Altitude	Latitude	
Earth Curvature	Turbulence	

Factors that affect flight paths

All about flying

**Across**

- 2 go out of the way
- 3 vertical elevation of an object above a surface
- 4 a curve deviates from being a straight line
- 5 irregular motion of the air
- 6 air current type
- 8 between the troposphere and the stratosphere

Down

- 1 measurement of distance north or south of the Equator
- 3 air movement
- 7 fall
- 9 path



LESSON 2

Review

1. Go over the answers of the crossword puzzle.

Group Activity

2. Work in small groups, and ensure to designate roles: *leader, recorder, researcher, and presenter*. Create a **graphic representation** on how Earth's shape and atmosphere affect flight paths by choosing one of the factors below. You may either watch the video presentation again or do your own research online. Poster papers and markers will be provided.

Factors Affecting Flight Paths

1 – fuel, time, and speed

4 – extra equatorial width

2 – curvature of the Earth (latitude)

5 – turbulence

3 – air current (altitude)

3. Use the space provided below to write down your notes for your presentation.



LESSON 3

Group Preparation

1. After making your posters, present them in front of the class by clearly explaining the factors that affect flight paths. Here are some steps and phrases that you can use for your presentations.

Step 1: Greet the audience, and introduce yourselves.

Step 2: Introduce your topic and inform the audience how long your presentation will take.

Step 3: Start presenting. Use some of the phrases below.

As you can see			chart, diagram, table, graph, figures, statistics,	...
We can see	from in	the		that ...

As	the	chart diagram table graph	shows, indicates,	
		figures statistics	show, indicate,	

The reason for ...
One possible explanation is that...
What's responsible for this effect is...
Let me explain...
There's no doubt in my mind...
It could well be that...
I'd say that ...

Step 4. Entertain questions from the audience by asking "Do you have any questions?" "Is there anything about our topic that you want us to explain further?"

Step 5. End you presentation by saying "Thank you" or "Thank you for listening."

2. Use the space provided below to take down notes or write your questions while listening to other groups' presentations.

Group Presentation

3. Each group is given four to five minutes to present. Expect some questions from your teacher or classmates.



LESSON 4

Review

1. **Individual Activity:** Answer a true or false pop quiz on the causes and effects of air currents to flight paths. Access “kahoot” online; search “*Causes and Effects to Flight Paths*”

Score: __/8

Individual Writing Activity

1. Write a short descriptive essay (150-200 words ONLY) on the cause and effect of turbulence based on the information you learned from the video presentation.
2. Don't forget to write a ***thesis statement** in the Introduction of your essay.

*A thesis statement is the last sentence of your introduction. It contains a clear and specific idea that you would like to talk about in the Body of the essay.

3. Use some of the following signal words to start your sentence.

Cause & Effect

- . So
- . Because
- . Since
- . If ... Then ...
- . Therefore
- . This led to
- . Reason why
- . As a result
- . May be due to
- . Effect of
- . Consequently
- . For this reason

Description

- . To begin with ...
 - . To illustrate ...
 - . For instance ...
 - . Such as ...
 - . An example ...
 - . In addition ...
 - . And ...
 - . Again ...
 - . Also ...
 - . Too ...
 - . Another ...
 - . Some characteristics are ...
-





LESSON 5

Review

1. What is a thesis statement?

Class Discussion

2. Read the news article below, and narrate what happened in the news using '**reported speech**.'

Here's why you shouldn't say the word 'bomb' while waiting to board a plane

A passenger got tired of waiting for his boarding pass to be checked at the entrance of a plane on Tuesday and uttered: **"Why need to check? I have no bomb."** The Star reported that Malaysia-based airline Malindo Air evacuated the 37 passengers off the plane before towing the aircraft to an isolation area for the bomb squad to check for explosives. Passengers were left standing on the tarmac from 4pm to 8pm as police searched them one by one. The flight from Selangor to Penang was supposed to have taken off at 3.40pm. Passengers were only allowed to board another flight at 9.30pm.

Petaling Jaya OCPD ACP Azmi Abu Kassim said: **"While staff were checking the passengers' boarding passes before going on the flight, one of them questioned out loud why they needed to be checked and said he didn't have a bomb."**

"After all passengers were seated, the stewardesses alerted the captain and control centre. They made a call not to fly the plane and lodged a police report. This is a sensitive word, hence we had to deploy a K9 and bomb unit to evaluate the threat," he said.

Investigations revealed that the supposed "bomb threat" was nothing more than just the careless words of an agitated passenger. Police gave the green light for the passengers to take off at 7.30pm.

"Don't say words like bomb on a plane," ACP Azmi warned. The airline said passengers were quarantined as part of safety measures and were provided meals while investigations were carried out.

"We would like to reassure the public that the situation was dealt with professionally by the authorities and no untoward incidents occurred. Malindo Air takes such threats to the well-being and safety of our passengers very seriously," it said in a statement. *Source: The Star*

Transforming direct speech to reported speech

Type	Example
direct speech	"I speak English."
reported speech (no backshift)	He says that he speaks English.
reported speech (backshift)	He said that he spoke English.

Type	Example
direct speech	□Carol, speak English.□
reported speech	He told Carol to speak English.

Type		Example
with interrogative	direct speech	"Why don't you speak English?"
	reported speech	He asked me why I didn't speak English.
without interrogative	direct speech	"Do you speak English?"
	reported speech	He asked me whether / if I spoke English.