



Civil Aviation Authority – DofE Skill Activity Logbook

Dangerous Goods

Participant name: _____


Participant age: _____

eDofE ID: _____

DofE Level (Bronze, Silver, Gold): _____

Start Date: _____

 **DURATION**
3 months

 **MATERIAL REQUIRED**
Pen and paper (optional), coin or washers (same size), LED bulb, vinegar, tin foil, cardboard, scissors, plate, sticky tape (optional), tweezers (optional)

The Duke of Edinburgh's Award Dangerous Goods

Thank you for choosing the Dangerous Goods course through the UK Civil Aviation Authority. We are passionate on sharing our knowledge with the next generation of talent to enter the aviation industry and giving you the opportunity to learn a new talent. This course will contain key skills such as learning the restricted items on an aircraft and understanding the fundamentals of batteries.

The below is a series of signposts of work that can be undertaken in any order. Each activity should last a minimum of one hour per week for the minimum time suggested. This course is designed for Bronze level award lasting 3 months (13 weeks), and can also be used to combine to achieve Silver and Gold awards.

After completion of the course please confirm you have done so by emailing dofe@caa.co.uk with your eDofE ID so we can process your skills award.

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You may fill the sheet digitally, or handwrite answers before scanning them for submission.

1

What is Dry Ice?

Learn what is dry ice and its uses. Please read and watch the videos first!

<https://science.howstuffworks.com/innovation/science-questions/question264.htm>

<https://www.youtube.com/watch?v=tffAGnZg2mw>

<https://www.youtube.com/watch?v=PoWoO8o0OQU>

Write down in your own words;

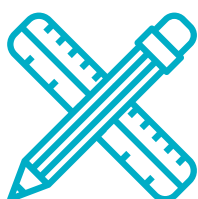
1. What is dry ice? What is it made of? What is it used for?
2. Why is it different from regular ice cubes found in the fridge?

2

Learning about Dangerous Goods Part 1

What are the 9 classes of dangerous goods and what are the risks with them?

<https://www.gov.uk/shipping-dangerous-goods/what-are-dangerous-goods>



Research the term dangerous goods, 9 classes and different labels of dangerous goods.

Make your own poster that can be displayed educating others about dangerous goods risks (digital or paper) including the 9 classes & labels of dangerous goods.

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4

Learning about Dangerous Goods Part 2

Do any items found in your house contain dangerous goods labels? Can you identify them?

<https://www.hse.gov.uk/chemical-classification/legal/background-directives-ghs.htm>

<https://www.hse.gov.uk/chemical-classification/labelling-packaging/hazard-symbols-hazard-pictograms.htm>

<https://unece.org/transport/dangerous-goods/ghs-pictograms>

<https://hsi.com/blog/ghs-labels-what-they-look-like-and-what-they-mean>

Research the term Global Harmonized System (GHS) Labels.

1. Write down what they are with their pictograms (ensure images used are referenced)?
2. Are all chemicals identified under GHS scheme dangerous goods in transport?
3. Why were GHS labels created? What signal words are used with GHS labels?
4. With the supervision of an adult, go around your house or supermarket identifying items with GHS labels or dangerous goods label

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Restricted Items on Aircraft

Learn about items that you can and cannot bring into the aircraft when flying.

Additional information:

<https://www.caa.co.uk/commercial-industry/airports/safety/dangerous-goods/dangerous-goods-information-provided-to-passengers/>

<https://www.caa.co.uk/passengers-and-public/before-you-fly/baggage/>

Go to 2 different UK airline websites of your choice and for each airline:

1. List 3 items that are not allowed to be carried as a passenger
2. List 3 items that are not allowed in your hand baggage
3. List 3 items that can only be carried in your hand baggage
4. What is the advice given by each airline on carrying spare lithium batteries, battery-operated devices and personal electronic devices?

What is their advice on carrying dry ice? Compare any differences with the instructions to passengers.

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Understanding Batteries Part 1

Build your own battery using the items found at your household. Use the video for guidance.

<https://edu.rsc.org/global-experiment/how-to-take-part/investigation-1>

1. How many cells did it take to light up an LED?
2. Try using a different food or drink-based solutions to repeat the experiment e.g. Salt water solution. Did using different solutions as the electrolyte give different results?

Write down the results from the experiment in the section attached.



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Understanding Batteries Part 2

Using the link provided and using your own research material, research Lithium-ion batteries to cover the following topics (including diagrams).

<https://www.explainthatstuff.com/how-lithium-ion-batteries-work.html>

1. Beginning of Lithium batteries & types
2. How the lithium-ion batteries work?
3. Advantages of Lithium-ion Batteries
4. Disadvantages of Lithium-ion Batteries

Understanding Batteries Part 3

10

Using your own research material, please research and write a summary of findings for the following:

1. What are AirTags and how they are used in air travel?
Are AirTags safe?
2. What is a smart luggage?

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Restricted items in the Post

Like placing baggage in an aircraft, sending a package through the post can also have restrictions.

Additional information:

https://personal.help.royal-mail.com/app/answers/detail/a_id/96/~prohibit-ed-and-restricted-items---ad-vice-for-personal-customers

Go to the Royal Mail website and look at the restrictions guide.

Write 5 item types appearing in the restrictions guide that:

- Cannot be send via post within the UK or internationally
- Can only be sent within the UK
- Are acceptable to send via post both in the UK and internationally

Carefully read the “Packing guidelines” given for some items. In your own words, explain why there are “Packing guidelines” for certain items.

And explain why it is important to follow the guidelines given.

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Dangerous Goods in different modes of Transport

Can Dangerous Goods be transported by drones?

Using the resources given and using your own research material, write your findings explaining what you found on the following topics.

1. Types of Dangerous Goods that are in demand to be transported by drones
2. What are the important factors to consider when transporting dangerous goods by drones
3. What the benefits of transporting dangerous goods by drones?



Additional information:

<https://www.caa.co.uk/our-work/publications/documents/content/cap-2248/>

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Documentation in Dangerous Goods Transport

What is a Safety Data Sheet (SDS) – also known as Material Safety Data Sheet (MSDS)?

In your own words explain why it is important to provide a Safety Data Sheet?

<https://www.hse.gov.uk/chemical-classification/labelling-packaging/safety-data-sheets.htm>

Congratulations on completing the logbook!