

SDG14 Future of the Ocean

MM3: Offshore Renewable Energy



Micro-Module 3: Offshore Renewable Energy

Research and Development

Lesson 3: Exploring Offshore Wind Farms

Subjects: Climate Action and Sustainable Development, Design, English, Engineering Science

7 AFFORDABLE AND CLEAN ENERGY



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



Lesson Title and Summary: Exploring Offshore Wind Farms

In this engaging lesson, learners virtually explore the world of wind energy through three videos. They begin with a tour of Arbuckle Wind Farm, gaining insight from the Operations Manager's drive-through. Next, they visit Hornsea Wind Farm, the world's largest offshore wind farm, with a 360° tour led by a wind turbine technician. Then, they explore Burbo Bank Offshore Wind Farm in the UK. Following the videos, learners brainstorm the diverse roles in wind farm development. Finally, they craft 'day-in-the-life' diaries for construction workers, considering elements like weather, safety, turbine size, and the offshore environment.

Vocabulary: Wind Energy, Virtual Tour, Roles and Jobs, Construction Worker Diary

In this lesson, the learner will:

- Explore virtual tours of real-world wind farms, including Arbuckle, Hornsea, and Burbo Bank, gaining insights into their operations and significance.
- Identify and discuss various roles and jobs involved in the design, construction, and maintenance of both onshore and offshore wind farms.
- Engage in brainstorming sessions to collaboratively compile a comprehensive list of roles and responsibilities within the wind energy sector.
- Apply their understanding by creating imaginative "day-in-the-life" diaries for construction workers, depicting the challenges, routines, and unique aspects of wind farm development.

Materials

- Worksheet: Day-In-The-Life
- Internet access
- Notepad and pen, or word-processor on laptop

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ACTIVITY INSTRUCTIONS

Activity 1: Virtual visit to Arbuckle Wind Farm (10 minutes)

1. Watch the [video](#) Virtual Wind Farm Tour Ep 3: Wind Farm Drive [3:02 mins] of a virtual tour of the Arbuckle Mountain wind farm in Oklahoma in the USA given by Operations Manager Andy Woods.
2. After watching the video, invite learners to share with the class what the most interesting part of the video was for them.

Activity 2: Virtual visit to Hornsea Wind Farm (10 mins)

1. Watch the [video](#) 360° Look Inside the World's Largest Offshore Wind Farm: Hornsea 2 [4:53 mins] of a 360° tour of the world's largest offshore wind farm – called Hornsea 2.
2. After watching the video, invite learners to brainstorm as a group, all the different roles/ jobs that feature in the design, construction, and maintenance of wind farms.

Activity 3: Create a day-in-the-life diary (30 mins)

1. After watching the three videos, have learners fill in the worksheet: a day-in-the-life for a typical construction worker involved in the development of wind farms. You might consider including information on the weather conditions, safety protocols, the journey out to sea, the shift times, the size of the turbines being constructed and the remoteness of the work.
2. From this worksheet, have learners create an infographic for their day-in-a-life.
3. Have each group share with the class.

REFLECTIVE EXERCISE: 3-2-1

- Three things they feel they have learnt from the exercise
- Two things they found most interesting and would like to explore more
- One – their opinion they have about the site / exercises

Use Post-its or a Mentimeter survey - [mentimeter.com](https://www.mentimeter.com) to gather reflections

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EXTENSION / REDUCTION ACTIVITIES:

Reduction: For a shorter class, skip viewing the second video, or leave out the infographic.

Extension: For a longer class, watch the additional video in the media box and create a series of three diary entries in Activity 3.

Option B: Have learners create a digital infographic using [canva.com](https://www.canva.com) and share with the class. Or have learners create a short tik-tok on a day in their life as a construction worker on an offshore wind farm. See Media Communication Video Micro-Module.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Virtual Wind Farm Tour Ep 3: Wind Farm Drive [3:02 mins] https://www.youtube.com/watch?v=uZci8D1JQmg&ab_channel=EDPRenewables

360° Look Inside the World's Largest Offshore Wind Farm: Hornsea 2 [4:53 mins] https://www.youtube.com/watch?v=M6g96aLHmQs&ab_channel=%C3%98rsted

A virtual of tour Burbo Bank offshore wind farm in 360° [2:26 mins] https://www.youtube.com/watch?v=BCgww3dCGg8&ab_channel=%C3%98rsted

Local Trip / Expertise / Additional Work and Assessments

Search online to see if you can find other virtual tours of other wind farms. There might also be other interviews with people who work on wind farms that could be interesting to watch.

Do you know anyone in your local community that works on wind farms? Perhaps invite them to deliver a talk to the class, or to interview them about their job?

MM3: L3 WS A-DAY-IN-THE-LIFE

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Complete the following chart with what you think a day-in-the-life of a typical offshore wind-farm construction worker is like:

Location	
Date	
8am	
9am	
10am	
11am	
12pm	
1pm	
2pm	
3pm	
4pm	
5pm	

MM3: L3 WS A-DAY-IN-THE-LIFE

14 LIFE BELOW WATER



Complete the following chart with what you think a day-in-the-life of a typical offshore wind-farm construction worker is like:

6pm	
7pm	
8pm	
9pm	
10pm	
11pm	

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Now, from your table above, create an infographic of your construction worker's day.

See examples of infographics here:

<https://visual.ly/community/Infographics/technology/day-life>

<https://www.behance.net/gallery/64936517/A-Day-In-The-Life>

Step 1: Define the Purpose

- Decide on the purpose of your infographic. What do you want to convey about the construction worker's daily routine?

Step 2: Plan Your Content

- Make a list of the key activities and events you want to include in your infographic. Think about what makes their day unique and interesting.

Step 3: Choose a Layout

- Determine the layout of your infographic. Will it be a vertical or horizontal design? You can also browse online templates for inspiration.

Step 4: Create Sections

- Divide your infographic into sections or time intervals (e.g., morning, afternoon, evening).
- Use a ruler or grid lines if you're drawing on paper to keep your sections neat.

Step 5: Design Icons and Graphics

- Create icons or small illustrations to represent each activity or event in their day. These visuals should be simple and easy to understand.
- If you're using digital tools, you can find free icons or design your own.

Step 6: Add Text

- Write short descriptions or labels for each activity or event. Be concise and use clear, legible fonts.
- Include the time or approximate time for each event to give a sense of their daily schedule.



Step 7: Add Colors

- Use colours to make your infographic visually appealing. You can assign specific colours to different sections or activities.
- Ensure that your colour choices are harmonious and easy to read.

Step 8: Create a Title and Introduction

- Add a catchy title to your infographic, such as "A Day in My Life" or something more creative.
- Include a brief introduction that sets the context for their day.

Step 9: Arrange Elements

- Arrange your icons, text, and graphics within each section, following a logical sequence from morning to night.
- Ensure that your infographic flows smoothly and is easy to follow.

Step 10: Review and Edit

- Double-check your infographic for accuracy, clarity, and any spelling or grammar errors.
- Ask a friend to review it for feedback.

Step 11: Finalise and Share

- Make any necessary revisions based on feedback.
- If you're creating a digital infographic, save it in a format suitable for sharing (e.g., JPEG, PNG, PDF).
- Share your "Day-in-the-Life" infographic with the class.