



Making Vegetable Musical Instruments

Suggested Participants - Second level learners

This pack provides the notes and worksheets required to deliver a session creating musical instruments from vegetables, including carrot recorders, neep drums and guitars, onion skin percussion and pea shakers. Success is shown by following instructions, observing and recording sounds and troubleshooting. The pack includes step-by-step instrument making, testing and refining sounds and a plenary discussion on sound differences, creativity, safety and sustainable use of natural materials.

What this pack contains:

- All the resources to undertake a musical instrument activity with your class.
- Learning Intentions, Success Criteria and Suggested Experiences & Outcomes.
- Learning for Sustainability links.
- Lesson plan.
- Suggested additional activities.
- Teacher information and learner vegetable tasting worksheet.

Learning Outcomes

- By the end of this lesson, learners will be able to:
- Construct simple musical instruments using everyday fruit and vegetables.
 - Demonstrate safe use of tools with adult supervision.
 - Experiment with sound production and describe differences in tone, pitch and volume.
 - Reflect on the process and outcomes of making a musical instrument.
 - Understand how natural materials can be used creatively and sustainably.

Success Criteria

- Learners can:
- Follow step-by-step instructions to create a carrot recorder, neep drum, neep guitar, onion skin percussion or pea shaker.
 - Use knives, drills and other tools safely with adult guidance.
 - Observe, describe and record the sounds made by their instruments.
 - Identify and correct any problems with the instruments' sound.
 - Record observations through drawings, notes or sketches.
 - Explain why using vegetables for instruments is a sustainable practice.

Experiences and Outcomes

- **EXA 2-17a** I can use my voice, musical instruments and music technology to explore sounds and create musical ideas.
- **EXA 2-18a** I can experiment with the sounds that instruments and objects make to create music.
- **HWB 2-19a** I can demonstrate how to move and handle equipment safely in a range of activities.
- **TCH 2-03a** I can explore how everyday products work and can create my own solutions safely.
- **SCN 2-07a** I can observe and explore natural materials to describe their properties and uses.

Learning for Sustainability

- **SDG 4 - Quality Education:** Hands-on learning and creativity development.
- **SDG 12 - Responsible Consumption & Production:** Using vegetables for instruments promotes resourcefulness and reduces waste.
- **SDG 13 - Climate Action:** Encourages thinking about natural resources and sustainable practices.
- **SDG 15 - Life on Land:** Encourages connection to natural materials.



Making Vegetable Musical Instruments Lesson Plan

Stage	Teacher Actions	Learner Activities	Resources
Starter (10 min)	Introduce the activity and objectives. Show examples of finished instruments. Discuss safety rules.	Listen, ask questions, observe examples. Discuss previous experiences with music or vegetables.	Images of carrot recorder, neep drum, onion percussion, pea shaker on learner worksheets.
Activity 1 (Carrot Recorder - 15-20 min)	Demonstrate steps safely, model drilling, cutting and testing. Provide adult support.	Learners follow worksheet steps to make carrot recorder. Draw instrument and record sound.	Carrot, chopping board, drills, apple corer, knife, worksheets.
Activity 2 (Neep Drum & Neep Guitar - 20-25 min)	Guide learners in hollowing neeps and fitting rubber bands/ elastics.	Learners create drum and guitar instruments, test sound and adjust. Record observations.	Neeps/turnips, chopping board, apple corer/knife, rubber bands, bin liners, elastic bands, worksheets.
Activity 3 (Onion Skin Percussion & Pea Shakers - 15-20 min)	Demonstrate peeling onion skins and making shakers. Emphasise safety.	Learners make percussion instruments, listen and describe sound	Onion, dried peas, greaseproof paper, cardboard tubes, tape, scissors, worksheets
Plenary (10 min)	Facilitate group sharing. Discuss differences in sound, challenges and sustainability.	Learners share their instruments, reflect on learning, discuss sustainability and creativity.	Completed instruments, sound demonstration, reflection sheets



Making Vegetable Musical Instruments Lesson Plan

Suggested discussion points

- What differences do you notice between the sounds of your instruments?
- How does the shape, size or material of the vegetable affect the sound?
- How did following the instructions carefully affect your results?
- What safety precautions were most important during this activity?
- Why is using vegetables for instruments a sustainable choice?
- How could you improve your instrument if you did it again?
- Can you think of other natural materials or objects in school that could be used to make music?

Learning

- **Music:** Learners can create and experiment with sounds using vegetable instruments.
- **Health & Wellbeing:** Learners can handle tools safely and follow health and safety guidance during practical activities.
- **Technologies:** Learners can explore how everyday materials can be transformed to make functional musical instruments.
- **Sciences:** Learners can observe and describe the properties of natural materials and how they affect sound.

Additional tasks

- **Facilitate sound exploration:** Guide learners to experiment with their instruments, comparing pitch, volume and tone, encourage discussion on why different shapes, sizes or materials produce different sounds.
- **Connect to sustainability learning:** Lead a reflection on how using vegetables creatively promotes sustainable practices and link this to food waste.

More information

- You can find more information about vegetables – including what they are and how they are grown on our [Story of Vegetable resource page](#).

Social media

Please tag [@TheRoyalHighlandEducationTrust \(Facebook\)](#) in your lesson photos/comments.

Carrot Recorder Worksheet

NAME _____

DATE _____



Materials I Need

- Carrot
- Chopping board
- Drill (adult help)
- Paddle drill bit
- Thin drill bit
- Apple corer
- Knife (adult help)

Health and Safety

Always use knives, drills and sharp tools **with an adult helping you**.
Keep your fingers away from blades and drill bits.
Hold the carrot steady on a **flat cutting board**.
Work slowly so the tools don't slip.
Do not put tools near your mouth – only the finished instrument.
Wash your hands and your carrot before and after making your instrument.

Steps

1. Prepare the Carrot

Cut the top end (thicker end) off the carrot and keep the piece you remove for later.

2. Hollow the Carrot

- Starting at the top (wide end of the carrot), use the paddle drill to hollow out the centre of the carrot. The carrot needs to be hollow for the top half of the vegetable only. Stop the paddle drill before you reach the thin end of the carrot.
- Remove any loose carrot bits.

My drawing

A large, empty rectangular box with an orange border, intended for the learner to draw their carrot recorder.

What I noticed:

A large, empty rectangular box with an orange border, intended for the learner to write down what they noticed during the process.

3. Shape the Plug

- Cut a short piece from the thin carrot end. This piece needs to be shaped to fit into the top of the hole you have just made to hollow out the carrot.
- Use the apple corer to shape it.
- Make sure it fits snugly.
- Cut a thin diagonal slice off one side so that when you blow into it the air can go through.

Sketch the mouthpiece:



4. Make the Air Hole

- To get a noise from the carrot, you need to get air into the cavity. This means you will need to carefully at the thick end of the carrot, make one straight into the hollow cavity around 4cm from the top (thick end) of the carrot. Your cut will need to reach the hollow space
- Make another diagonal cut at 45 degrees to meet your original cut so you are removing a wedge of carrot.

Does it fit?

- ☐ Yes
- ☐ No (I need to trim it)

My whistle sound:

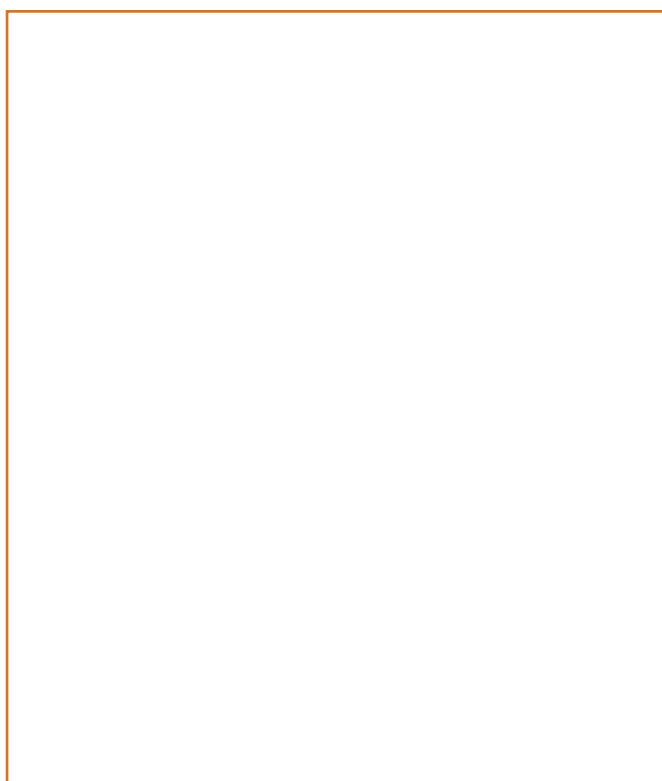
- ☐ Worked first time
- ☐ Needed fixing
- ☐ Still working on it

5. Add Finger Holes

- Use the thin drill bit to make finger holes along the outside of the carrot under the wedge you have just removed, like a recorder. The holes you make will need to be deep enough to enter the cavity, but not so deep that they come out the other side.

Number of holes I made:

My Finished Carrot Instrument
(Draw it here)



How it Sounds
Write what your carrot instrument sounds like:



Turnip (Neep) Drum Worksheet

NAME _____

DATE _____



Materials I Need

- Half a neep (swede) or turnip. An adult will need to halve the neep/turnip before the activity starts, making sure they cut across the middle, leaving the base and the top of the neep as a base for the drum to stand on.
- Chopping board
- Apple corer/knife (adult help)
- Variety of sizes of elastic band, these need to be quite a tight fit
- Bin liner/dustbin bag.



Health and Safety

Always use knife/apple corer **with an adult helping you**. Keep your fingers away from blades and sharp edges. Hold the neep or turnip steady on a **flat cutting board**. Work slowly so the tools don't slip. Do not put tools near your mouth.

Steps

1. Preparing the neep

Using the apple corer/knife, hollow out the inside of the neep. Leave about 0.5 – 1cm thickness of outer skin/flesh to retain the strength of the sides.

What I noticed (hint think about the colour of the neep/turnip flesh):

2. Prepare for securing the drum skin

Carefully use the knife to cut a narrow groove right round the outside of the neep, 1 – 2cm below the top.

Sketch your neep at this stage:



3. Securing the drum skin

Cut a piece of bin bag about 4 cm bigger than the top of the neep and lay it over the carved out neep.

Does it fit?

- ☐ Yes
- ☐ No (I need to cut a bigger bit)

4. Secure the drum skin

Using an elastic band that fits quite tightly, slide it over the top of the neep and into the narrow groove you made, so that the elastic band stays firmly in the groove and keeps the bin liner tight over the carved out top of the neep. Gently tap the bag with your fingers or the blunt end of a pencil to see if it makes a sound.

My drum sound:

- ☐ Worked first time
- ☐ Needed fixing
- ☐ Still working on it

5. If your drum doesn't work well first time.

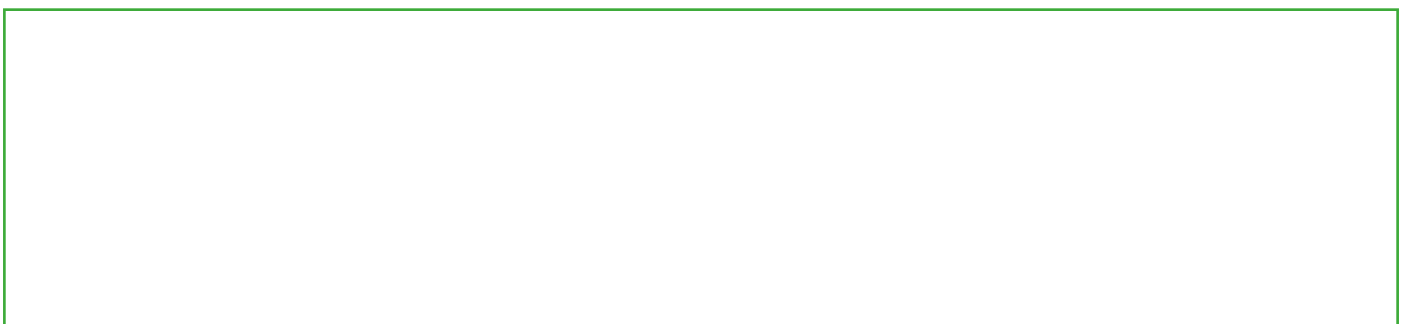
Try gently pulling the bag tighter over the top of the carved out neep, keeping the elastic band in the groove you cut.

My Finished NEEP Drum Instrument (Draw it here)



How it Sounds. [Listen to the noise of the drum.](#)

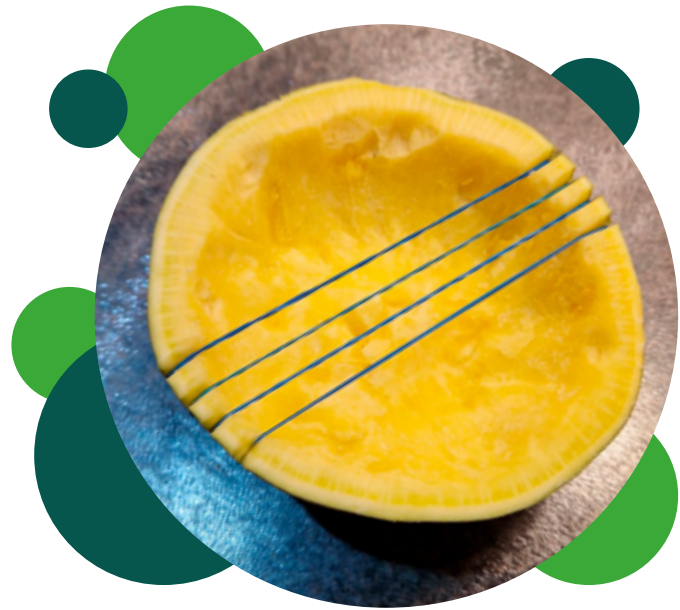
Write what your neep drum instrument sounds like:



Neep Guitar Worksheet

NAME _____

DATE _____



Materials I Need

- Half a neep (swede) or turnip. An adult will need to halve the neep/turnip before the activity starts, making sure they cut across the middle, leaving the base and the cut top of the neep as a base for the drum to stand on.
- Chopping board
- Apple corer/knife (adult help)
- Variety of sizes of rubber bands



Health and Safety

Always use apple corer/knives **with an adult helping you**. Keep your fingers away from blades/sharp parts. Hold the neep steady on a **flat cutting board**. Work slowly so the tools don't slip. Do not put tools near your mouth.

Steps

1. Prepare the neep

Using the apple corer/knife, hollow out the inside of the neep.

Leave about 0.5 – 1cm thickness of outer skin/flesh to retain the strength of the sides.



Decide how many bands your neep guitar is going to have - how many strings does a guitar have?

2. Prepare for fitting the rubber bands

Carefully use the knife to cut narrow grooves in the bottom of the neep for the number of bands you are going to use. Then cut similar grooves opposite each other on the top rim of the carved out neep. **Make sure the grooves, on the rim and on the bottom, all go in the same direction!**



What I noticed:

3. Stretch the bands across the carved out top of the neep, making sure each band goes into the correct grooves each side of the rim and on the bottom of the neep.

Have you used the same size and colour of rubber bands?

Did you choose to use your favourite colours?

What is your favourite colour?



4. Playing your guitar

- Try strumming your guitar, either with your finger or with something like the blunt end of a pencil.
[Listen to the noise of the guitar.](#)
- If your guitar does not make a noise you may need to use tighter rubber bands.

Does it make a noise?

- ☐ Yes
- ☐ No (You may need to use different rubber bands)

My Finished Neep Guitar Instrument
(Draw it here)

A large, empty rectangular box with a thin black border, intended for a student to draw their finished neep guitar instrument.

How it Sounds.

Write what your neep guitar instrument sounds like:

A large, empty rectangular box with a thin black border, intended for a student to write about the sound of their neep guitar instrument.

Onion skin percussion Worksheet

NAME _____

DATE _____



Materials I Need

- Any large onion, brown, red or white.
- Chopping board
- Knife (adult help)



Health and Safety

Always use knives **with an adult helping you**.
Work slowly so the tools don't slip.
Do not put tools near your mouth.

Steps

1. Prepare your onion

Cut the top off the onion to make removing the skin easier – you cannot start to peel off the skin without doing this.

My drawing

A large, empty rectangular box with a thin blue border, intended for the learner to draw their preparation of the onion.

2. Using your fingers, peel off all the outer dry layers of skin from the onion.

Stop when you reach the fleshier part of the onion

Does peeling the outer skin off the onion have any effect on your eyes and nose?

A large, empty rectangular box with a thin blue border, intended for the learner to write their answer to the question about the effects of peeling the onion.

3. Make your instrument sound.

[Listen to the onion skin noise here.](#)

Take the dried onion skins in your hand and scrunch them by squeezing them in your hand.

Describe how this feels:

What happens to the skins the more you use them to make sound?

- ☐ They do not change
- ☐ The sound they makes changes
- ☐ They eventually stop making a sound

My Onion Skin Instrument (Draw it here)

How it Sounds

Write what your onion percussion sounds like:

Pea Shaker Worksheet

NAME _____

DATE _____



Materials I Need

- Dried peas
- Greaseproof paper
- Sticky tape
- Cardboard tube, can be any size
- Tablespoon
- Scissors (adult help)



Health and Safety

Always use scissors **with an adult helping you**.
Work slowly so the scissors don't slip.
Do not put scissors near your mouth.

Steps

1. Prepare the peas

Take about a tablespoon of dried peas.

Can you count how many dried peas are in your tablespoonful?



2. Cut 2 squares of grease proof paper, the square needs to be about 2cm bigger all round than the end of the tube you are using.

Does your grease proof paper have to be a square, is there another shape you think would work?

3. Carefully bring the edges of the greaseproof paper up around the sides of the tube and work together with a partner to put a piece of sticky tape right round the tube to hold the paper in place. **Be careful not to crush the tube!**

If you have not managed to catch any of the surface of the tube you may need to add smaller pieces of tape to stop the greaseproof paper end sliding off.

Who was your partner for this work, it is good to work together to complete tasks?

4. Carefully add your tablespoon of dried peas into the tube.

Do you think your shaker would work if you filled the tube with dried peas?

☐ Yes ☐ No

If not why not?

5. Repeat action 3 with the second piece of greaseproof paper to seal the other end of the tube. Try not to tip out any of the dried peas while you do this. You could put one or two pieces of sticky tape top to bottom along the sides of the tube, just to make sure nothing escapes if you use your shaker very energetically.

My pea shaker sound:

- ☐ Worked first time
☐ Needed fixing
☐ Still working on it

My Finished Pea Shaker Instrument (Draw it here)

How it Sounds. [Listen to a pea shaker.](#)

Write what your pea shaker sounds like:

