



Forest Quiz

2021



Name _____

School _____

Class _____

Points _____ / 91 pt

40TH NATIONWIDE COMPETITION FOR SECONDARY SCHOOL STUDENTS

1

HANDSOME WILLOW SPECIES. Fill in the gaps.

A) This species of willow with a striped trunk is

a _____ . Since it
is useful to many other forest species, it is called
a _____ .



B) Willows are among the first plants to bloom in the spring. Catkins

are an early stage of willows' _____ .

Male willows have yellow _____ and female willows greenish _____.

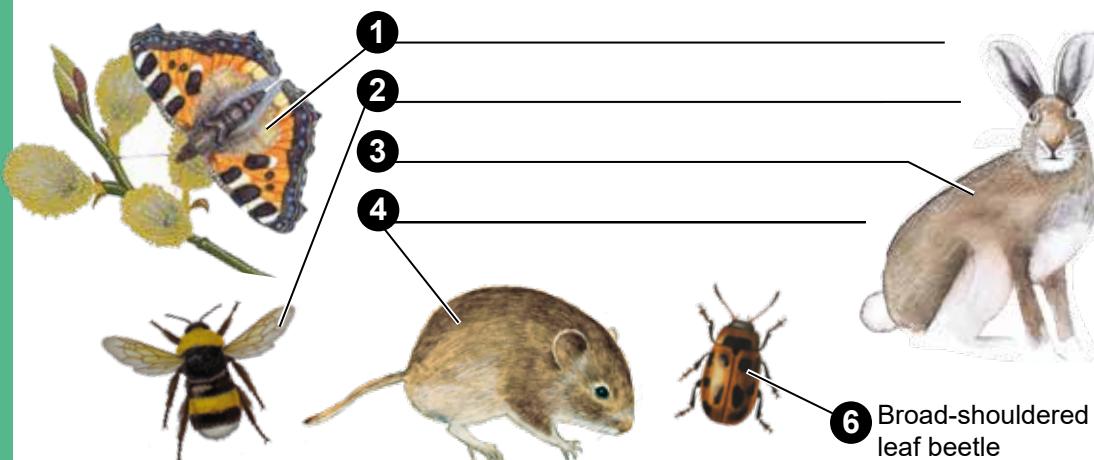
If a plant's stamens and pistils grow on separate plants, it is called _____.

Willows produce a lot of light seeds, which are spread by the _____ to new locations.

They also spread effectively by means of root sprouts. This mode of reproduction where the new plants are clones of their mother plant is called _____ reproduction.

C) These animals feed on willows. Name them on the lines 1–4.

D) Link each species with a description by writing the correct numbers (1–8) in the boxes.



- | | |
|--------------------------|---|
| <input type="checkbox"/> | Insect, feeds on willow leaves |
| <input type="checkbox"/> | Rodent, feeds on willow buds and leaves |
| <input type="checkbox"/> | Mammal, feeds on willow bark and twigs |
| <input type="checkbox"/> | Insect, pollinates flowers |
| <input type="checkbox"/> | Invertebrate, feeds on flower nectar |
| <input type="checkbox"/> | Parasitic fungus on willow leaves |
| <input type="checkbox"/> | Saprophyte living on old willows |
| <input type="checkbox"/> | Willow epiphyte living on old willows |

/20 pt

2

GRID ANALYSIS OF PLANTS IN FOREST FIELD LAYER.

A school class studied a forest near the school. They determined the percentage cover and occurrence of species in nine sections. The table describes their findings.

Species	Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8	Section 9
Bilberry	20 %	80 %	35 %	80 %	5 %	5 %	35 %	+	70 %
Wavy hairgrass	+	+	+	+	+	-	40 %	+	+
Common cow-wheat	+	+	+	+	+	-	+	+	+
May lily	+	+	+	+	-	-	-	+	+
Spruce seedling	+	+	+	+	-	-	+	+	-
Rowan seedling	+	-	+	+	20 %	+	-	50 %	+
Lingonberry	-	+	+	+	20 %	5 %	+	5 %	20 %
Arctic starflower	+	+	+	+	-	-	-	+	-
Reed grass	+	+	+	+	+	-	20 %	+	+
Hairy woodrush	-	-	+	-	-	-	+	+	-
Oak fern	-	-	-	-	-	-	5 %	+	-
Mountain melick	-	-	-	-	-	-	-	+	-

Key

% Area covered by species

+ Single plant

- Not found

Find answers to questions a-f in the table. Deduce answers to questions g-i.

- a) Which dwarf shrub was most plentiful? _____
- b) Which species was found in most sections, but only individually?

- c) What was the rarest species? _____
- d) What was the difference of lingonberry cover in sections 5 and 6? _____ %-points
- e) Which section had the most species? No. _____
- f) Which section most likely has a path? No. _____
- g) What was the forest type? _____
- h) What was the mineral soil type? _____
- i) What was probably the most common tree species? _____

/ 9 pt

3

THINK ABOUT YOUR CONSUMPTION HABITS.

Wood is used in making all of these products. How do these items help solve environmental problems? Write the correct numbers in the boxes.



- Replaces cotton
- Replaces plastics
- Replaces aluminium
- Long-term carbon storage
- Replaces teeth-decaying sugar
- Reduces greenhouse gas emissions from traffic
- Reduces problem waste from hospitals

/ 7 pt

4

BIODIVERSITY IN COMMERCIAL HERB-RICH FORESTS

Herb-rich forests grow on rich soils and have many species. They contain many tree species, the stands are of varying ages and density, and the vegetation is layered.



A) Name the plants on the lines.

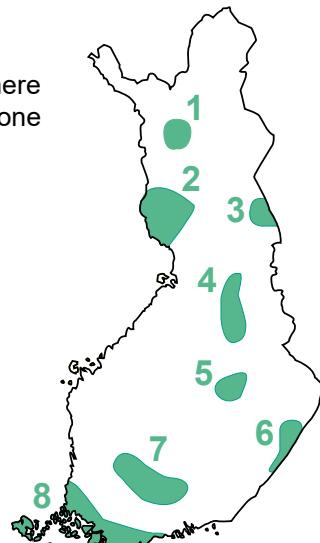
B) Write TR (tree layer), SH (shrub layer), FI (field layer), GR (ground layer) in the boxes to show where the plant grows.

1	<input type="text"/>
2	<input type="text"/>
3	<input type="text"/>

4	<input type="text"/>
5	<input type="text"/>
6	<input type="text"/>

C) Only about 1–2% of Finnish forests are herb-rich. They can be extensive in areas where the bedrock contains limestone and other alkaline rocks. Link each herb-rich forest zone with areas marked on the map. **Write the correct numbers in the circles.**

- | | |
|--|---|
| <input type="circle"/> South Häme herb-rich forests | <input type="circle"/> Lapland Triangle herb-rich forests |
| <input type="circle"/> Kainuu herb-rich forests | <input type="circle"/> North Kuusamo herb-rich forests |
| <input type="circle"/> Kittilä herb-rich forests | <input type="circle"/> North Savo herb-rich forests |
| <input type="circle"/> Central Karelia herb-rich forests | <input type="circle"/> Oak zone |



D) Herb-rich forests are important habitats for forest biodiversity. The most valuable of them are protected. About half of the threatened forest species live in herb-rich forests, many on old live or decayed trees. Herb-rich forests can include many tree species or be dominated by spruce.

Most herb-rich forests are well-growing commercial forests. Skilled forest owners can both produce timber and maintain a broad range of species in their forests. **Tick the actions that keep up and increase biodiversity when managing herb-rich forests.**

- When felling, leave retention trees of different species and sizes.
- After felling, plant a mixed forest.
- When thinning out young trees, favour just one species. Remove all others.
- Spare any oaks, limes and other hardwood species in your forest.
- When thinning out, see that the result is uneven in density.
- Remove all existing deadwood.
- Remove all trees newly felled by winds.
- Spare all bushes typical of herb-rich forests.
- Spare forest key species.
- Spare as many spruces as you can in herb-rich forests with light-demanding plants.



Common hepatica is an early-blooming herb

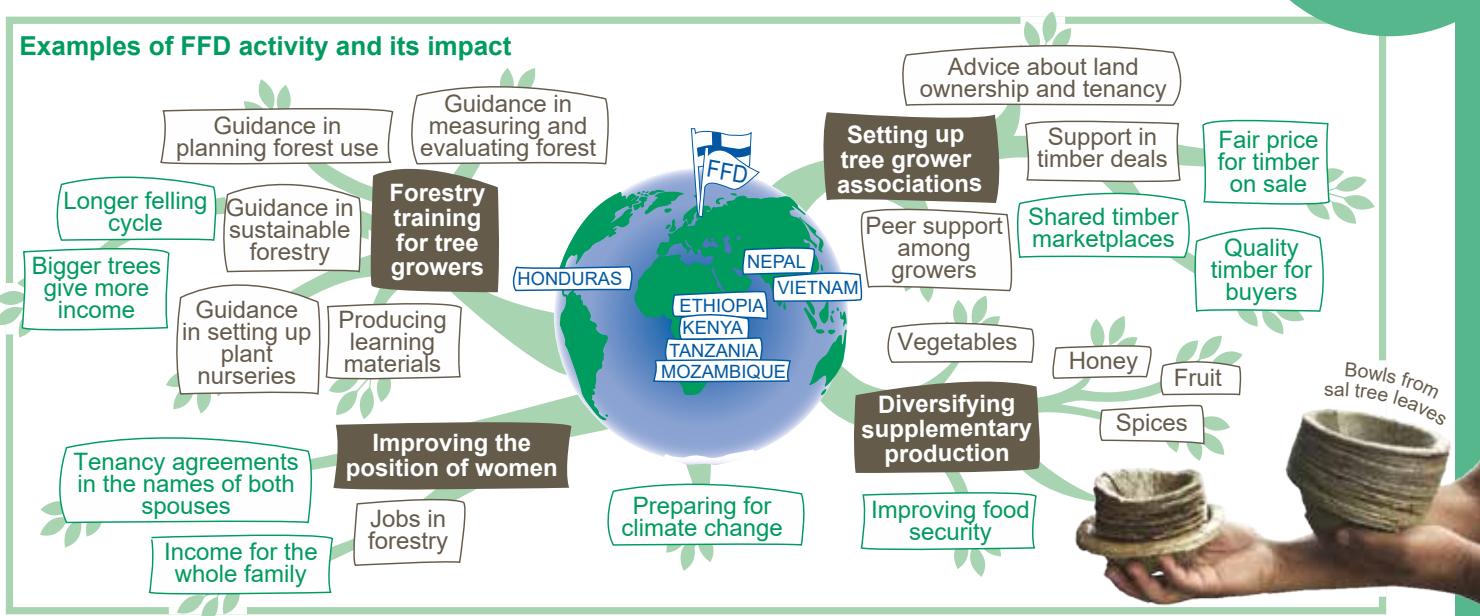
/ 30 pt

5

EXPORTING FOREST KNOW-HOW CAN HELP SMALL FARMERS IN DEVELOPING COUNTRIES

On small farms, tree growers can plant food crops under the trees for a daily income. The trees are 'savings accounts' for bigger expenses, like school uniforms and school fees. The Finnish non-profit organization Food and Forest Development Finland (FFD) supports tree growers in the countries shown on the map. Farmers pass on to others what they learn. Thanks to their cooperation, tree growers gain more know-how. **Study the pictures and answer the questions.**

Those funding the Forest Quiz donate 2 euros to FFD for each participating teacher (total 1 200 €).



What are the continents where FFD operates? _____

How does FFD support tree growers in developing countries? _____

What kind of training does FFD export? _____

What do tree growers gain income from? _____



How do tree growers benefit from the associations? _____

What activity supported by FFD can you see in the photo? _____

Think of what you know and then answer: How does improving the position of women improve conditions in developing countries? _____

/24 pt

6

TRY YOUR HAND AT FORESTRY?

We arrange a lottery of 2-week jobs in Forest Management Associations in June 2021.

Will you participate in the lottery?

Yes, please! Not this time, but thanks.

/ 1 pt



The model replies

are indicative and you may deviate from them. The replies may be checked by a teacher or a pupil. Each school may check and score the replies according to their own teaching. To determine the winner in a school, the checking method must be uniform for all participants. For equal treatment, the replies qualifying for later stages will be re-assessed at the Forest Association.

**Maximum points
91 pt**

Tip: Mark the points in the margin with a colour pencil. It is then easy to calculate the total in the box at the bottom.

1

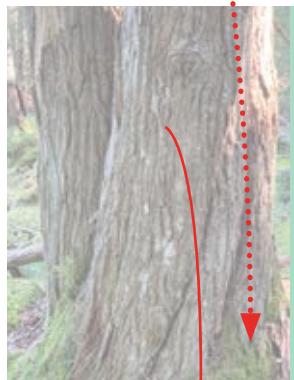
HANDSOME WILLOW SPECIES. Fill in the gaps.

- A) This species of willow with a striped trunk is
 a **goat willow 1 pt**. Since it
 is useful to many other forest species, it is called
 a **key / keystone species 1 pt**.

- B) Willows are among the first plants to bloom in the spring. Catkins
 are an early stage of willows' **flowers / reproductive organs 1 pt**
 Male willows have yellow **stamens 1 pt** and female willows greenish **pistils 1 pt**.
 If a plant's stamens and pistils grow on separate plants, it is called **dioecious 1 pt**.
 Willows produce a lot of light seeds, which are spread by the **wind 1 pt** to new locations.
 They also spread effectively by means of root sprouts. This mode of reproduction where the new plants are clones of
 their mother plant is called **asexual / vegetative 1 pt** reproduction.

- C) These animals feed on willows. Name them on the lines 1–4.

- D) Link each species with a description by writing the correct numbers (1–8) in the boxes.



8



1 **Small tortoiseshell 1 pt**

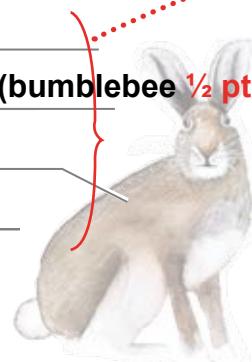


2 **White-tailed bumblebee 1 pt (bumblebee ½ pt)**



3 **Hare / mountain hare 1 pt**

4 **Bank vole 1 pt (vole ½ pt)**



6 **Broad-shouldered leaf beetle**



5 **Willow tar spot**



7 **Diamond-willow fungus**



8 **Lungwort lichen**

6 **1 pt**

, feeds on leaves

4 **1 pt**

it, feeds on willow and leaves

3 **1 pt**

hal, feeds on willow and twigs

2 **1 pt**

ites flowers

1 **1 pt**

ebate, feeds on nectar

5 **1 pt**

itic fungus on leaves

7 **1 pt**

phyte living willows

8 **1 pt**

epiphyte living willows

4

8

20 /20 pt

Total

2

GRID ANALYSIS OF PLANTS IN FOREST FIELD LAYER.

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Lingonberry	-	+	+	+	20 %	5 %	+	5 %	20 %
Arctic starflower	+	+	+	+	-	-	-	+	-
Reed grass	+	+	+	+	+	-	20 %	+	+
Hairy woodrush	-	-	+	-	-	-	+	+	-
Oak fern	-	-	-	-	-	-	5 %	+	-
Mountain melick	-	-	-	-	-	-	-	+	-

Key

% Area covered by species

+ Single plant

- Not found

Find answers to questions a-f in the table. Deduce answers to questions g-i.

Why:

It has the least cover and there are few species.

a) Which dwarf shrub was most plentiful? **Bilberry 1 pt**

b) Which species was found in most sections, but only individually?

Common cow-wheat 1 ptc) What was the rarest species? **Mountain melick 1 pt**d) What was the difference of lingonberry cover in sections 5 and 6? **15 1 pt** % -pointse) Which section had the most species? No. **8 1 pt**f) Which section most likely has a path? No. **6 1 pt**g) What was the forest type? **Mesic heath forest 1 pt**h) What was the mineral soil type? **Moraine / (Glacial) till 1 pt**i) What was probably the most common tree species? **(Norway) spruce 1 pt****9 / 9 pt**

3

THINK ABOUT YOUR CONSUMPTION HABITS. Wood is used in making all of these products. How do these items help solve environmental problems? Write the correct numbers in the boxes.



- | | | |
|------|---|---|
| 1 pt | 4 | Replaces cotton |
| 1 pt | 7 | Replaces plastics |
| 1 pt | 2 | Replaces aluminium |
| 1 pt | 3 | Long-term carbon storage |
| 1 pt | 6 | Replaces teeth-decaying sugar |
| 1 pt | 5 | Reduces greenhouse gas emissions from traffic |
| 1 pt | 1 | Reduces problem waste from hospitals |
- 7 / 7 pt

4

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A) Name the plants on the lines.

B) Write TR (tree layer), SH (shrub layer), FI (field layer), GR (ground layer) in the boxes to show where the plant grows.

1 Mountain/alpine currant 1 pt

SH 1 pt

4

Thyme-moss 1 pt

GR 1 pt

2 Wood sorrel 1 pt

FI 1 pt

5

Mezereum 1 pt

SH 1 pt

3 Herb-paris / True lovers' knot 1 pt

FI 1 pt

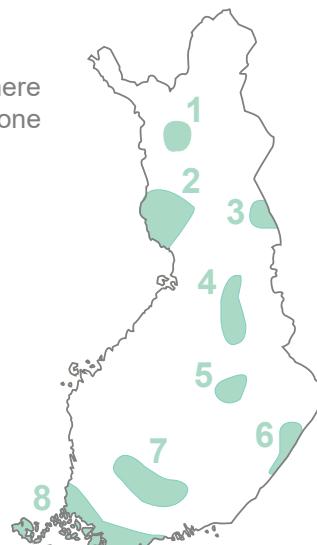
6

Oak 1 pt

TR 1 pt

C) Only about 1–2% of Finnish forests are herb-rich. They can be extensive in areas where the bedrock contains limestone and other alkaline rocks. Link each herb-rich forest zone with areas marked on the map. Write the correct numbers in the circles.

- | | | | | | |
|------|---|-----------------------------------|------|---|------------------------------------|
| 1 pt | 7 | South Häme herb-rich forests | 1 pt | 2 | Lapland Triangle herb-rich forests |
| 1 pt | 4 | Kainuu herb-rich forests | 1 pt | 3 | North Kuusamo herb-rich forests |
| 1 pt | 1 | Kittilä herb-rich forests | 1 pt | 5 | North Savo herb-rich forests |
| 1 p | 6 | Central Karelia herb-rich forests | 1 pt | 8 | Oak zone |



D) Herb-rich forests are important habitats for forest biodiversity. The most valuable of them are protected.

About half of the threatened forest species live in herb-rich forests, many on old live or decayed trees. Herb-rich forests can include many tree species or be dominated by spruce.

Most herb-rich forests are well-growing commercial forests. Skilled forest owners can both produce timber and maintain a broad range of species in their forests. Tick the actions that keep up and increase biodiversity when managing herb-rich forests.

1 pt When felling, leave retention trees of different species and sizes.

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1 pt Remove all existing deadwood.

1 pt Remove all trees newly felled by winds.

1 pt Spare all bushes typical of herb-rich forests.

1 pt Spare forest key species.

1 pt Spare as many spruces as you can in herb-rich forests with light-demanding plants.

If all or none
have been ticked
= 0 points



Common hepatica is an early-blooming herb

30/30 pt

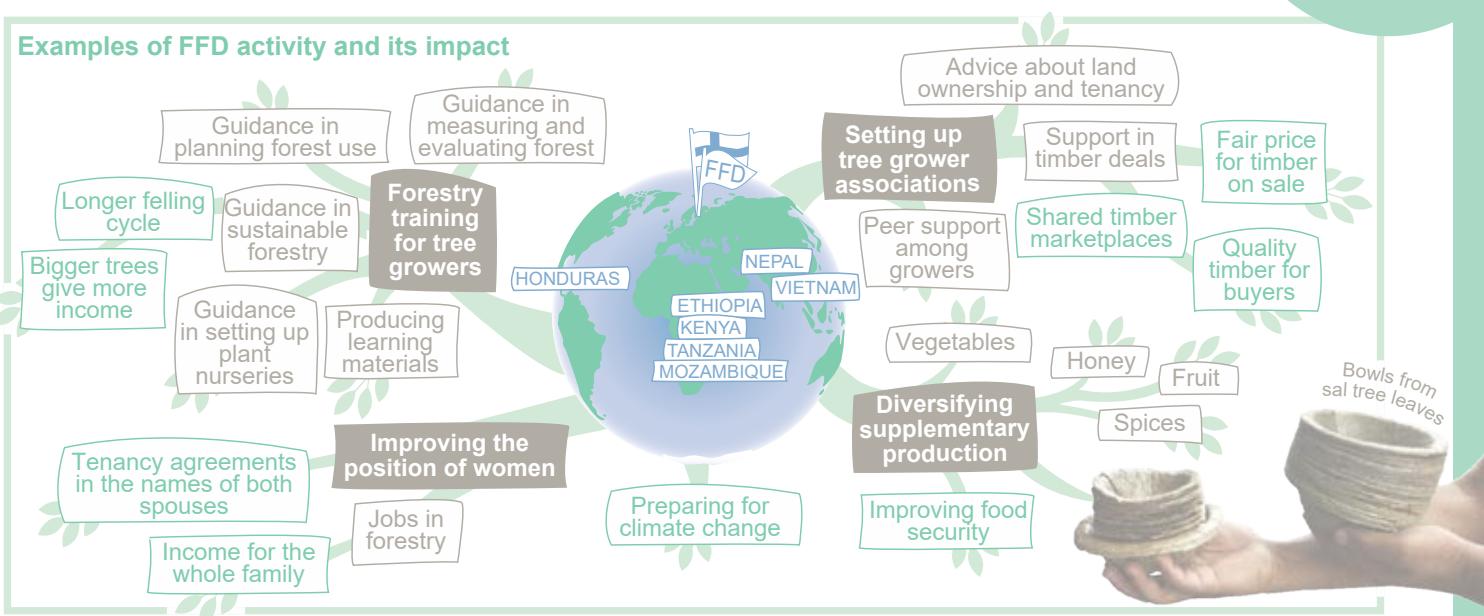
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Examples of FFD activity and its impact



What are the continents where FFD operates? **Africa 1 pt, Asia 1 pt, North America 1 pt**

How does FFD support tree growers in developing countries? **Forest-related training 1 p.**

Setting up associations 1 pt, Improving the position of women 1 pt,

Diversifying supplementary production 1 pt

What kind of training does FFD export? **Production of learning materials 1 pt,**

Guidance in the following: measuring and evaluating forest 1 pt, planning of forest use 1 pt, sustainable forestry 1 pt, setting up plant nurseries 1 pt

What do tree growers gain income from? **Timber sales 1 pt, supplementary production 1 pt**

such as fruit (or any other appropriate item) 1 pt. Maximum points for this question: 3 pt

How do tree growers benefit from the associations? **Help in matters related to land ownership and tenancy 1 pt, peer support among growers 1 pt, support in timber trading (such as shared marketplaces for timber) 1 pt. Cooperation gives them more power. Maximum 3 pt.**

What activity supported by FFD can you see in the photo? **Plant nursery 1 pt,**

Improving the position of women / jobs in forestry 1 pt,

Think of what you know and then answer: How does improving the position of women improve conditions in developing countries?

Education and training for women slows down the population growth and improves women's job opportunities. Income from jobs helps provide food for the family, better health care and education for children. Education and financial independence provide opportunities to participate in decision-making. Points can be given for any other good answer. Maximum 4 pt.

24/24 pt

6

TRY YOUR HAND AT FORESTRY?

We arrange a lottery of 2-week jobs in Forest Management Associations in June 2021.

Will you participate in the lottery?

Yes, please! Not this time, but thanks.

If either box is ticked = 1 pt. No tick = 0 pt.

1 / 1 pt