Name: _____ Date: _____

Why Guitar Frets Crowd Together Near the Body

Circle group

A guitar has thin metal bars on its neck. They are called frets. The frets are not spaced evenly. Near the tuning pegs they are far apart. Near the body of the guitar they are close together.

Here is why. A string makes a sound when it shakes. A long string makes a low note. A short string makes a high note. A player presses a string down on a fret. Now only the part from the fret to the bridge can shake. That part is shorter, so the note is higher.

Each fret cuts the same fraction off the string that is left. The string keeps getting shorter. So each step has less string to cut. The frets must be closer and closer together.

The twelfth fret is halfway along the string. It gives the same note as the open string, only higher. Musicians call this an octave. A builder must measure with care. Then the notes sound right all the way up the neck.

Questions

1. What are frets?

_____

_____

2. Where are the frets far apart?

_____

_____

3. What happens to the note when a string is pressed on a fret?

_____

_____

4. Where is the twelfth fret?

_____

_____

5. Why must the frets get closer together along the neck?

_____

_____

6. Why must a builder measure with care?

_____

_____

Words to know

frets: thin metal bars across the neck of a guitar
bridge: the piece on a guitar that holds the strings at the body end
octave: the same note sounding higher or lower, with a set distance between

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Guitar Frets Crowd Together Near the Body

Triangle group

Look closely at the neck of a guitar and you will see thin metal bars set across it. These bars are called frets, and they are not spaced evenly. Near the tuning pegs the frets sit far apart. Closer to the body of the guitar they crowd together more and more.

The reason has to do with how a string makes its sound. A plucked string vibrates, and the length of the part that is free to move decides the pitch. A long string makes a low note, and a shorter string makes a higher one. When a player presses a string down against a fret, only the part between that fret and the bridge can vibrate, so the note rises.

Each fret shortens the string by the same fraction of what is left, not by the same amount. As the vibrating part gets shorter, every step has less string to cut away. That is why the bars must sit closer together as they climb the neck.

The pattern has a neat result. The twelfth fret sits exactly halfway along the string. Pressing there gives the same note as the open string, only higher, a distance that musicians call an octave. A builder who measures the spacing with great care gives the guitar notes that sound in tune all the way up the neck.

Questions

1. What are frets?

_____

_____

2. How are the frets spaced along the neck?

_____

_____

3. What happens to the note when a string is pressed against a fret?

_____

_____

4. Where is the twelfth fret found?

_____

_____

5. Why do the frets have to sit closer together farther along the neck?

_____

_____

6. Why must a builder measure the fret spacing with great care?

_____

_____

Words to know

frets: thin metal bars across the neck of a guitar
pitch: how high or low a musical note sounds
vibrates: moves back and forth very fast
bridge: the piece on a guitar that holds the strings at the body end
octave: the same note sounding higher or lower, with a set distance between

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

Name: _____ Date: _____

Why Guitar Frets Crowd Together Near the Body

Square group

If you examine the neck of a guitar, you will notice thin metal bars running across it. These bars are called frets, and they are deliberately not spaced evenly. Near the tuning pegs the frets lie far apart, whereas closer to the body of the guitar they crowd together more and more tightly.

The explanation lies in how a string produces its sound. A plucked string vibrates, and the length of the portion that is free to move determines the pitch. A long string produces a low note, while a shorter string produces a higher one. When a player presses a string against a fret, only the section between that fret and the bridge is able to vibrate, so the pitch of the note rises.

Each fret shortens the string by the same fraction of whatever length remains, rather than by the same absolute amount. As the vibrating section grows shorter, every successive step has less string left to remove. That is why the bars must sit closer together as they climb toward the body.

This pattern leads to a pleasing result. The twelfth fret sits exactly halfway along the string, and pressing the string there gives the same note as the open string, only higher, a distance that musicians call an octave. A builder who measures the spacing with great precision gives the guitar notes that sound in tune all the way up the neck.

Questions

1. What are frets, and where are they found?

_____

_____

2. How does the spacing of the frets change along the neck?

_____

_____

3. What happens to a note when a player presses a string against a fret?

_____

_____

4. Where does the twelfth fret sit on the string?

_____

_____

5. Why must the frets move closer together as they climb the neck?

_____

_____

6. Why does a builder need to measure the fret spacing with great precision?

_____

_____

Words to know

frets: thin metal bars across the neck of a guitar
pitch: how high or low a musical note sounds
vibrates: moves back and forth very fast
bridge: the piece on a guitar that holds the strings at the body end
octave: the same note sounding higher or lower, with a set distance between

Talk together (every group has these)

1. Find one fact that every group read. How did your sheet say it?
2. What did your sheet tell you that you think another group's did not? Ask them.
3. What is one question about this topic that none of the sheets answered?

For the teacher: Why Guitar Frets Crowd Together Near the Body

Each student sheet carries a shape, not a level. The same topic and facts, written three ways.

Circle: Why Guitar Frets Crowd Together Near the Body

Easier · 166 words · Flesch-Kincaid grade 1.6

1. Thin metal bars on the neck of a guitar.
2. Near the tuning pegs.
3. The string is shorter, so the note is higher.
4. Halfway along the string.
5. Each step cuts a fraction of a shorter string, so it covers less space.
6. If not, the notes would sound wrong.

Triangle: Why Guitar Frets Crowd Together Near the Body

This passage · 224 words · Flesch-Kincaid grade 5

1. Thin metal bars set across the neck of a guitar.
2. They are far apart near the tuning pegs and closer together near the body.
3. The part that can vibrate gets shorter, so the note gets higher.
4. Exactly halfway along the string.
5. Each step cuts the same fraction of a shorter string, so each step covers less distance.
6. If the spacing is off, the notes would sound out of tune.

Square: Why Guitar Frets Crowd Together Near the Body

Harder · 236 words · Flesch-Kincaid grade 7.9

1. Thin metal bars set across the neck of a guitar.
2. They are far apart near the tuning pegs and crowd closer together near the body.
3. Only the part between the fret and the bridge can vibrate, so the note rises.
4. Exactly halfway along it.
5. Each step removes the same fraction of a shorter and shorter string, so each step covers less distance.
6. Careless spacing would make the notes sound out of tune.