== Global Warming quiz 4- Feedback and climate models version B ==

<quiz display=simple>

{Changes in ice-albedo refers to changes in}

+a) how much the Earth's surface absorbs or reflects incoming sunlight

-b) how much CO2 is absorbed by the sun

-c) how much ice is melted during the summer months

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

+a) two of these are true

-b) the north and south poles

-c) the highest mountains

-d) the upper atmosphere

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

+a) all of these are true

-b) by verifying its ability to calculate current climate conditions.

-c) by verifying its ability to calculate past climate conditions.

-d) by making predictions about future years and seeing if they come true.

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version C ==

<quiz display=simple>

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

-b) how much CO2 is absorbed by the sun

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

+b) all of these are true

-c) by verifying its ability to calculate current climate conditions.

-d) by verifying its ability to calculate past climate conditions.

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the highest mountains

-b) the upper atmosphere

+c) two of these are true

-d) the north and south poles

</quiz>

== Global Warming quiz 4- Feedback and climate models version D ==

<quiz display=simple>

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

+b) two of these are true

-c) the highest mountains

-d) the north and south poles

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

-b) how much CO2 is absorbed by the sun

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate past climate conditions.

-b) by verifying its ability to calculate current climate conditions.

-c) by making predictions about future years and seeing if they come true.

+d) all of these are true

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version E ==

<quiz display=simple>

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

+b) all of these are true

-c) by verifying its ability to calculate current climate conditions.

-d) by verifying its ability to calculate past climate conditions.

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much CO2 is absorbed by the sun

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the north and south poles

-b) the upper atmosphere

+c) two of these are true

-d) the highest mountains

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version F ==

<quiz display=simple>

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

-b) the north and south poles

-c) the highest mountains

+d) two of these are true

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

+a) all of these are true

-b) by verifying its ability to calculate current climate conditions.

-c) by verifying its ability to calculate past climate conditions.

-d) by making predictions about future years and seeing if they come true.

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much CO2 is absorbed by the sun

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version G ==

<quiz display=simple>

{The [[w:cryosphere|cryosphere]] refers to}

+a) two of these are true

-b) the upper atmosphere

-c) the north and south poles

-d) the highest mountains

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

-b) how much ice is melted during the summer months

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

+a) all of these are true

-b) by verifying its ability to calculate current climate conditions.

-c) by making predictions about future years and seeing if they come true.

-d) by verifying its ability to calculate past climate conditions.

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version H ==

<quiz display=simple>

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much ice is melted during the summer months

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

-b) the north and south poles

-c) the highest mountains

+d) two of these are true

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate current climate conditions.

-b) by making predictions about future years and seeing if they come true.

+c) all of these are true

-d) by verifying its ability to calculate past climate conditions.

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version I ==

<quiz display=simple>

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

-b) how much ice is melted during the summer months

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{The [[w:cryosphere|cryosphere]] refers to}

-a) the highest mountains

+b) two of these are true

-c) the north and south poles

-d) the upper atmosphere

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

-b) by verifying its ability to calculate past climate conditions.

-c) by verifying its ability to calculate current climate conditions.

+d) all of these are true

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version J ==

<quiz display=simple>

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate past climate conditions.

-b) by making predictions about future years and seeing if they come true.

-c) by verifying its ability to calculate current climate conditions.

+d) all of these are true

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much ice is melted during the summer months

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the highest mountains

-b) the north and south poles

-c) the upper atmosphere

+d) two of these are true

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version K ==

<quiz display=simple>

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate current climate conditions.

+b) all of these are true

-c) by verifying its ability to calculate past climate conditions.

-d) by making predictions about future years and seeing if they come true.

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

-b) the highest mountains

-c) the north and south poles

+d) two of these are true

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much ice is melted during the summer months

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version L ==

<quiz display=simple>

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the highest mountains

-b) the upper atmosphere

+c) two of these are true

-d) the north and south poles

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

+a) how much the Earth's surface absorbs or reflects incoming sunlight

-b) how much CO2 is absorbed by the sun

-c) how much ice is melted during the summer months

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

-b) by verifying its ability to calculate current climate conditions.

+c) all of these are true

-d) by verifying its ability to calculate past climate conditions.

</quiz>

== Global Warming quiz 4- Feedback and climate models version M ==

<quiz display=simple>

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the north and south poles

-b) the upper atmosphere

+c) two of these are true

-d) the highest mountains

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

-b) by verifying its ability to calculate past climate conditions.

+c) all of these are true

-d) by verifying its ability to calculate current climate conditions.

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much ice is melted during the summer months

</quiz>

== Global Warming quiz 4- Feedback and climate models version N ==

<quiz display=simple>

{Changes in ice-albedo refers to changes in}

+a) how much the Earth's surface absorbs or reflects incoming sunlight

-b) how much CO2 is absorbed by the sun

-c) how much ice is melted during the summer months

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

+a) two of these are true

-b) the highest mountains

-c) the upper atmosphere

-d) the north and south poles

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{How is the validity of a computer model typically tested?}

+a) all of these are true

-b) by verifying its ability to calculate past climate conditions.

-c) by verifying its ability to calculate current climate conditions.

-d) by making predictions about future years and seeing if they come true.

</quiz>

== Global Warming quiz 4- Feedback and climate models version O ==

<quiz display=simple>

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

+a) all of these are true

-b) by making predictions about future years and seeing if they come true.

-c) by verifying its ability to calculate past climate conditions.

-d) by verifying its ability to calculate current climate conditions.

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

+a) two of these are true

-b) the upper atmosphere

-c) the north and south poles

-d) the highest mountains

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

-b) how much ice is melted during the summer months

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version P ==

<quiz display=simple>

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much CO2 is absorbed by the sun

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate past climate conditions.

-b) by verifying its ability to calculate current climate conditions.

+c) all of these are true

-d) by making predictions about future years and seeing if they come true.

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the highest mountains

-b) the upper atmosphere

-c) the north and south poles

+d) two of these are true

</quiz>

== Global Warming quiz 4- Feedback and climate models version Q ==

<quiz display=simple>

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much CO2 is absorbed by the sun

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate past climate conditions.

-b) by making predictions about future years and seeing if they come true.

+c) all of these are true

-d) by verifying its ability to calculate current climate conditions.

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the north and south poles

-b) the highest mountains

-c) the upper atmosphere

+d) two of these are true

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version R ==

<quiz display=simple>

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much CO2 is absorbed by the sun

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

-b) by verifying its ability to calculate past climate conditions.

-c) by verifying its ability to calculate current climate conditions.

+d) all of these are true

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the north and south poles

-b) the highest mountains

+c) two of these are true

-d) the upper atmosphere

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version S ==

<quiz display=simple>

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

-b) the north and south poles

-c) the highest mountains

+d) two of these are true

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much CO2 is absorbed by the sun

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate past climate conditions.

+b) all of these are true

-c) by making predictions about future years and seeing if they come true.

-d) by verifying its ability to calculate current climate conditions.

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version T ==

<quiz display=simple>

{Changes in ice-albedo refers to changes in}

-a) how much ice is melted during the summer months

-b) how much CO2 is absorbed by the sun

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

-b) by verifying its ability to calculate current climate conditions.

-c) by verifying its ability to calculate past climate conditions.

+d) all of these are true

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

-b) the north and south poles

+c) two of these are true

-d) the highest mountains

</quiz>

== Global Warming quiz 4- Feedback and climate models version U ==

<quiz display=simple>

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the north and south poles

-b) the highest mountains

-c) the upper atmosphere

+d) two of these are true

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

-b) by verifying its ability to calculate past climate conditions.

-c) by verifying its ability to calculate current climate conditions.

+d) all of these are true

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much ice is melted during the summer months

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version V ==

<quiz display=simple>

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

+a) how much the Earth's surface absorbs or reflects incoming sunlight

-b) how much CO2 is absorbed by the sun

-c) how much ice is melted during the summer months

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate current climate conditions.

+b) all of these are true

-c) by making predictions about future years and seeing if they come true.

-d) by verifying its ability to calculate past climate conditions.

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The [[w:cryosphere|cryosphere]] refers to}

+a) two of these are true

-b) the highest mountains

-c) the north and south poles

-d) the upper atmosphere

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version W ==

<quiz display=simple>

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

+b) how much the Earth's surface absorbs or reflects incoming sunlight

-c) how much ice is melted during the summer months

{The [[w:cryosphere|cryosphere]] refers to}

-a) the highest mountains

-b) the north and south poles

-c) the upper atmosphere

+d) two of these are true

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate current climate conditions.

+b) all of these are true

-c) by making predictions about future years and seeing if they come true.

-d) by verifying its ability to calculate past climate conditions.

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version X ==

<quiz display=simple>

{The [[w:cryosphere|cryosphere]] refers to}

+a) two of these are true

-b) the highest mountains

-c) the north and south poles

-d) the upper atmosphere

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate past climate conditions.

-b) by making predictions about future years and seeing if they come true.

+c) all of these are true

-d) by verifying its ability to calculate current climate conditions.

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

-b) how much ice is melted during the summer months

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version Y ==

<quiz display=simple>

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Changes in ice-albedo refers to changes in}

+a) how much the Earth's surface absorbs or reflects incoming sunlight

-b) how much ice is melted during the summer months

-c) how much CO2 is absorbed by the sun

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{How is the validity of a computer model typically tested?}

-a) by making predictions about future years and seeing if they come true.

+b) all of these are true

-c) by verifying its ability to calculate past climate conditions.

-d) by verifying its ability to calculate current climate conditions.

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

+b) two of these are true

-c) the north and south poles

-d) the highest mountains

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

</quiz>

== Global Warming quiz 4- Feedback and climate models version Z ==

<quiz display=simple>

{Changes in ice-albedo refers to changes in}

-a) how much CO2 is absorbed by the sun

-b) how much ice is melted during the summer months

+c) how much the Earth's surface absorbs or reflects incoming sunlight

{While computer modeling indicate that the warming since 1970 is dominated by man-made greenhouse gas emissions, they are unable to conclusively ascertain whether the warming from 1910 to 1945 was anthropogenic.}

+a) true

-b) false

{The [[w:cryosphere|cryosphere]] refers to}

-a) the upper atmosphere

-b) the north and south poles

-c) the highest mountains

+d) two of these are true

{Computer modeling has conclusively established that anthropogenic warming has occurred since 1910.}

-a) true

+b) false

{Computer models accurately model feedback mechanisms associated with the role of clouds as a feedback mechanism.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that more heat is lost from the planet to compensate.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is more difficult to model.}

+a) true

-b) false

{Analysis of the uncertainties associated with feedback suggests that the "worst-case" scenario is easier to model.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet until the thermal (infra-red) radiation away the planet rises to match the solar radiation onto the planet}

+a) true

-b) false

{How is the validity of a computer model typically tested?}

-a) by verifying its ability to calculate current climate conditions.

+b) all of these are true

-c) by making predictions about future years and seeing if they come true.

-d) by verifying its ability to calculate past climate conditions.

{Computer models accurately model feedback mechanisms associated with how the soil will retain or release CO2 as the earth warms.}

-a) true

+b) false

{Stefan-Boltzmann radiation is called a negative feedback mechanism because if the sun's radiation increases, the Stefan-Boltzmann law ensures that this heat is retained by the planet.}

-a) true

+b) false

{The Stefan-Boltzmann law plays a central role in establishing a planets temperature as the sun heats the planet with thermal (infra-red) radiation adding to the other solar radiation onto the planet}

-a) true

+b) false

</quiz>