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According to the Unified Soil Classification System (USCS), which letter represents silt?

- a) S
- b) M
- c) C
- d) G

Answer: B
Reward: advance 4 squares
Punishment: stay where you are



How is it called the limit between solid and semi-solid states of a soil?

- a) Liquid limit
- b) Plastic limit
- c) Shrinkage limit
- d) Atterberg limit

Answer: C
Reward: advance 4 squares
Punishment: stay where you are



You're in charge of finding the dry unit weight of a soil sample, for that you'll need the weight of solids and:

- a) Volume of voids
- b) Total volume
- c) Volume of solids
- d) Volume of water

Answer: B
Reward: advance 3 squares
Punishment: stay where you are



According to the Unified Soil Classification System (USCS), which letter represents clay?

- a) S
- b) M
- c) C
- d) G

Answer: C
Reward: advance 4 squares
Punishment: stay where you are

YOUR CHOICE



YOUR CHOICE




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According to the Unified Soil Classification System (USCS), how is a soil classified when fewer than 50 % of its particles are retained on the No. 200 sieve (0.075 mm) and fewer than 50 % of its coarse fraction is retained on the No. 4 sieve (4.75 mm)?

- a) Gravel
- b) Sand
- c) Clay
- d) Peat



Answer: B
Reward: advance 2 squares
Punishment: go back 1 square



Which of the following is not presented as a percentage?

- a) Water content
- b) Porosity
- c) Degree of saturation
- d) Void ratio



Answer: D
Reward: advance 3 squares
Punishment: go back 1 square



What is the particle size test used for materials passing the 200 sieve (up to 0.075 mm in diameter)?

- a) Sieving
- b) Flocculation
- c) Sedimentation
- d) Gradation


Answer: C
Reward: advance 3 squares
Punishment: Go back 1 square



Which of the following is needed to define soil behaviour in terms of plasticity?

- a) Submersed unit weight
- b) water content
- c) void ratio
- d) Density

Answer: B
Reward: advance 3 squares
Punishment: stay where you are



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YOUR CHOICE



YOUR CHOICE



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For a fully saturated sample, the degree of saturation is:

- a) 0.5
- b) 0.0
- c) 0.8
- d) 1.0

Answer: D
Reward: advance 3 squares
Punishment: stay where you are



According to the Unified Soil Classification System (USCS), how is a soil classified when more than 50% of the particles are retained on the No. 200 sieve (0.075 mm) and more than 50% of the coarse fraction is retained on the No. 4 sieve (4.75 mm)?

- a) Gravel
- b) Sand
- c) Clay
- d) Peat

Answer: A
Reward: advance 3 squares
Punishment: go back 1 square



The sedimentation process is based on which theory:

- a) Stokes' law
- b) Darcy's law
- c) Coulomb's law
- d) Casagrande's law

Answer: A
Reward: advance 4 squares
Punishment: stay where you are



The moisture content at the point of transition from plastic to liquid state is:

- a) Plastic limit
- b) Liquid limit
- c) Shrinkage limit
- d) Failure limit

Resposta: B
Reward: advance 4 squares
Punishment: go back 1 square



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To perform an experiment, you placed a clay soil sample in the oven to lose moisture. After a few hours in the oven, you observed that the sample:

- a) Expanded
- b) Contracted
- c) Liquefied
- d) Melted

Answer: B
Reward: advance 4 squares
Punishment: go back 2 squares



What device is used to determine the specific weight of solids?

- a) Pycnometer
- b) Densimeter;
- c) Dispersion device
- d) Sieve

Answer: A
Reward: advance 4 squares
Punishment: stay where you are



The Highway Classification System (HRB) uses what percentage passing through the No. 200 sieve as a classification boundary?

- a) 50
- b) 35
- c) 45
- d) 60

Answer: B
Reward: advance 3 squares
Punishment: stay where you are



According to the Unified Soil Classification System (USCS), how can an organic soil with compressible characteristics be classified?

- a) Peat
- b) Gravel
- c) Sand
- d) Silt

Answer: A
Reward: advance 4 squares
Punishment: go back 1 square

YOUR CHOICE



YOUR CHOICE




YOUR CHOICE



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According to the Unified Soil Classification System (USCS), which letter represents sand?

a) S
b) M
c) C
d) G



Answer: A
Reward: advance 4 squares
Punishment: stay where you are



Regarding the plasticity of a soil, the higher the clay content, the higher is the value of:

a) Liquid limit
b) Plastic limit
c) Plasticity index
d) Shrinkage limit



Answer: C
Reward: advance 3 squares
Punishment: stay where you are



If a soil has a saturated unit weight equal to 15kN/m^3 , what is its submerged unit weight in kN/m^3 ?

a) 25
b) 10
c) 5
d) 1.5


Answer: C
Reward: advance 5 squares
Punishment: go back 1 square



The presence of clay minerals in fine soils gives the soil the ability to be:

a) Moulded
b) Compacted
c) Smouldered
d) Lapidated

Answer: A
Reward: advance 4 squares
Punishment: go back 1 square



YOUR CHOICE



YOUR CHOICE



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A soil has a dry unit weight of 1.6 g/cm^3 and a moisture content of 25%. What is the natural (bulk) unit weight of the soil, in g/cm^3 ?

- a) 1.20
- b) 1.60
- c) 2.00
- d) 2.13

Answer: C
Reward: advance 3 squares
Punishment: stay where you are



Volume of voids, V_v , is equal to the sum of:

- a) Volume of air and solids
- b) Volume of air and water
- c) Volume of water and solids
- d) None the above

Answer: B
Reward: advance 4 squares
Punishment: go back 1 square



According to the Unified Soil Classification System (USCS), which letter represents gravel?

- a) S
- b) M
- c) C
- d) G

Answer: D
Reward: advance 4 squares
Punishment: stay where you are



You want to classify a soil according to the Highway Classification System (HRB). However, you need to know some characteristics of this soil, such as its consistency and grain size. For this, which of the following tests will you carry out?

- a) Particle size distribution & consistency limits
- b) Sedimentation & Consolidation
- c) Sieving & moisture content
- d) Permeability and Sieving

Answer: A
Reward: advance 5 squares
Punishment: stay where you are



YOUR CHOICE



YOUR CHOICE



YOUR CHOICE



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What is the porosity of a soil sample with a void ratio of 0.50?

- a) 50%
- b) 25%
- c) 33%
- d) 67%

Answer: C
Reward: advance 5 squares
Punishment: stay where you are



Regarding permeability, gravel is:

- a) highly permeable
- b) poorly permeable
- c) partially permeable
- d) impermeable

Answer: A
Reward: advance 4 squares
Punishment: stay where you are



Sieving is used for:

- a) Fine-grained soils
- b) gravel sludge
- c) Coarse grained soils
- d) peat

Answer: C
Reward: advance 3 squares
Punishment: stay where you are



In the sieve analysis test, what is the main criterion for classifying the particles retained on a specific sieve?

- a) Unit weight of particles
- b) Total weight of particles
- c) Diameter of particles
- d) Shape of particles

Answer: C
Reward: advance 2 squares
Punishment: stay where you are



YOUR CHOICE



YOUR CHOICE



YOUR CHOICE



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Volume of solids is represented by:

- a) V_v
- b) V_w
- c) V_s
- d) V_a

Answer: C
Reward: advance 3 squares
Punishment: stay where you are



The total weight of a moist sample is the sum of:

- a) Weight of water and solids
- b) Weight of water and air
- c) Weight of solids and air
- d) None the above

Answer: A
Reward: advance 4 squares
Punishment: stay where you are



A soil sample has a mass of 190 g. After drying in an oven, it becomes 150 g. What is the mass of water before drying in the oven?

- a) 35 g
- b) 40 g
- c) 30 g
- d) 45 g

Answer: B
Reward: advance 5 squares
Punishment: go back 1 square



A particle size curve with a flat horizontal portion represents, relative to the distribution of particles:

- a) Absence of intermediate size particles
- b) Presence of intermediate size particles
- c) Presence of particles of smaller sizes
- d) Presence of larger sized particles

Answer: A
Reward: advance 5 squares
Punishment: stay where you are



YOUR CHOICE



YOUR CHOICE



YOUR CHOICE



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A soil sample can be classified as well graded if:

- a) Large numbers of particles of the same size exist
- b) Excess of spherical particles exist
- c) Good representation of particles of different sizes exist
- d) None the above

Answer: C
Reward: advance 3 squares
Punishment: stay where you are



If the porosity of a soil sample is 20%, what is its void ratio?

- a) 0.20
- b) 0.17
- c) 0.28
- d) 0.25

Answer: D
Reward: advance 6 squares
Punishment: stay where you are



According to BS 1377, which penetration depth typically corresponds to the liquid limit in the fall cone method?

- a) 10 mm
- b) 20 mm
- c) 25 mm
- d) 35 mm

Answer: B
Reward: advance 5 squares
Punishment: stay where you are



The degree of saturation is defined as the ratio of:

- a) Water and void volume
- b) Air and voids volume
- c) Air and water volume
- d) Voids and total volume

Answer: A
Reward: advance 3 squares
Punishment: go back 1 square



YOUR CHOICE



YOUR CHOICE



YOUR CHOICE



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The relationship between porosity (n) and the void ratio (e) is given by:

- a) $n = 1/(1+e)$
- b) $n = e/(1-e)$
- c) $n = 1/(1-e)$
- d) $n = e/(1+e)$

Answer: D
Reward: advance 5 squares
Punishment: go back 1 square



The weight of solids is represented by:

- a) W_d
- b) W_w
- c) W_a
- d) W

Answer: A
Reward: advance 3 squares
Punishment: stay where you are



In the sedimentation test, what is the purpose of using a dispersing agent?

- a) Accelerate the sedimentation of particles.
- b) Prevent flocculation of fine particles.
- c) Reduce the viscosity of the fluid.
- d) Increase the density of the fluid.

Answer: B
Reward: advance 5 squares
Punishment: stay where you are



About the sedimentation analysis, which of the following assumptions is INCORRECT?

- a) Soil particles are spherical;
- b) Particles settle independently, with no interference from settling speed.
- c) Soil particles have different specific gravity
- d) The walls of the bottle, in which the suspension is kept, do not affect the settling

Answer: C
Reward: advance 6 squares
Punishment: stay where you are



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In the fall cone test for liquid limit determination, what is directly measured during the test?


- a) The time
- b) The depth of penetration
- c) The water content
- d) None the above


Answer: B
Reward: advance 3 squares 
Punishment: go back 1 square



The shape of the particle size curve is represented by:


- a) Effective size
- b) Effective diameter
- c) Uniform coefficient
- d) Curvature coefficient


Answer: D
Reward: advance 4 squares 
Punishment: go back 1 square



Which of the following limits is NOT a consistency limit?


- a) Plastic limit
- b) Liquid limit
- c) Solid limit
- d) Shrinkage limit

Answer: C
Reward: advance 4 squares 
Punishment: stay where you are



The property of the soil that is related to the deformability capacity is:

- a) Fluency
- b) Tenacity
- c) Plasticity
- d) None the above

Answer: C
Reward: advance 5 squares 
Punishment: go back 1 square

YOUR CHOICE



YOUR CHOICE



YOUR CHOICE



YOUR CHOICE



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The soil can present itself in different consistency states. Of the following options, which is NOT one of these states?

- a) Solid
- b) Elastic
- c) Semisolid
- d) Liquid

Answer: B
Reward: advance 4 squares
Punishment: stay where you are



Clay plasticity depends on:

- a) The nature of the clay minerals present
- b) The volume of clay present
- c) The clay mass present
- d) All the above

Answer: D
Reward: advance 4 squares
Punishment: stay where you are



Which of the following coefficients is determined from the particle size distribution curve?

- a) Curvature coefficient
- b) Plasticity coefficient
- c) Liquid coefficient
- d) None the above

Answer: A
Reward: advance 4 squares
Punishment: stay where you are



What is the unit of measurement of the coefficient of curvature?

- a) mm
- b) g
- c) kN
- d) None the above

ansWer: D
Reward: advance 3 squares
Punishment: Go back 1 square



YOUR CHOICE



YOUR CHOICE



YOUR CHOICE



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The Atterberg Limits are: Plasticity Limit, Liquid Limit and Shrinkage Limit.

Answer: True

Reward: advance 2 squares
Punishment: Go back 1 square



The soil void ratio is given as a percentage.

ANSWER: False. Void ratio is dimensionless and given as fraction.

Reward: advance 3 squares
Punishment: Go back 1 square



If a soil is saturated ($S=100\%$), it has only two phases in its constitution: liquid and solid.

Answer: True

Reward: advance 2 squares
Punishment: stay where you are



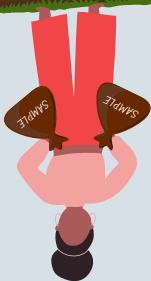
Soil porosity can be given in percentage.

Answer: True

Reward: advance 3 squares
Punishment: stay where you are



IS IT TRUE?



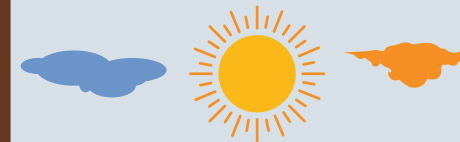
IS IT TRUE?




IS IT TRUE?



IS IT TRUE?





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The void ratio of a soil can be greater than 1.


Answer: True. $e = V_v/V_s$. In highly porous soils, V_v can be greater than V_s , resulting in $e > 1$.


Reward: advance 3 squares 
Punishment: stay where you are



According to the Unified Soil Classification System (USCS), a soil in which more than 50% of the particles are retained in the 200 sieve (up to 0.075 mm in diameter) is classified as coarse.


Answer: True


Reward: advance 3 squares 
Punishment: Go back 1 square



The following parameters can be obtained through laboratory tests: moisture content, specific gravity and saturated unit weight.


Answer: True

Reward: advance 4 squares 
Punishment: Go back 1 square





When a body is submerged, there is a force called thrust that acts on it in the same direction as gravity.



Answer: False. Thrust acts against the gravity.

Reward: advance 3 squares 
Punishment: stay where you are



IS IT TRUE?



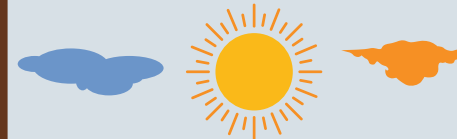

IS IT TRUE?



IS IT TRUE?



IS IT TRUE?



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The plasticity index (PI) obtained from the liquid and plastic limits, is an indicator of the capacity of a soil to be moulded.

Answer: True

Reward: advance 2 squares
Punishment: Go back 1 square



The void ratio can be obtained from an equation that relates specific gravity with unit weight of water.

Answer: False.

Reward: advance 3 squares
Punishment: stay where you are



During the particle size analysis test, the material passing through the 200 sieve (up to 0.075 mm in diameter) should be subjected to the sedimentation test.

Answer: True

Reward: advance 4 squares
Punishment: stay where you are



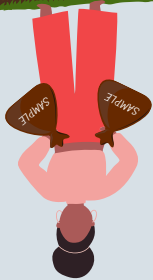
According to the Unified Soil Classification System (USCS), a sandy gravel soil receives the following classification abbreviation: GW-SW.

Answer: False. G and S cannot be used together.

Reward: advance 4 squares
Punishment: stay where you are



IS IT TRUE?



IS IT TRUE?



IS IT TRUE?



IS IT TRUE?



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The Highway Classification System (HRB) and Unified Soil Classification System (USCS) use the same percentages of passing material in the 200 sieve to separate fine from coarse soils.

Answer: False. USCS – 50%; HRB – 35%.
Reward: advance 5 squares
Punishment: Go back 1 square



The plastic limit is defined as the moisture content at which the behaviour of a soil changes from the plastic state to the liquid state.

Answer: False. This would be liquid limit.
Reward: advance 2 squares
Punishment: stay where you are



The soil physical index provides important information for studying soils' compressibility and collapse.

Answer: True
Reward: advance 4 squares
Punishment: stay where you are



Sieving is carried out by placing the various sieves one above the other in descending order of their openings from top to bottom.

Answer: True
Reward: advance 3 squares
Punishment: stay where you are



IS IT TRUE?



IS IT TRUE?



IS IT TRUE?



IS IT TRUE?



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The weight of voids in a soil is equal to the weight of water.

Answer: True

Reward: advance 4 squares
Punishment: Go back 1 square



According to the Unified Soil Classification System (USCS), when coarse soil (G, S) has low compressibility (L), it is classified as GL.

Answer: False. L cannot complement G or S.

Reward: advance 4 squares
Punishment: stay where you are



Disturbed samples can be used for tests such as particle size distribution and consistency limits.

Answer: True

Reward: advance 4 squares
Punishment: Go back 1 square



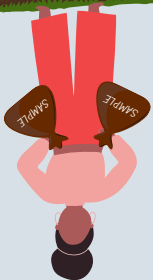
Well graded soils have less voids than poorly graded soils.

Answer: True

Reward: advance 3 squares
Punishment: Go back 1 square



IS IT TRUE?



IS IT TRUE?



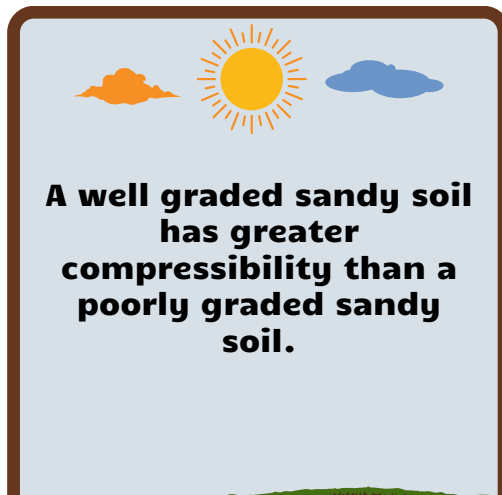
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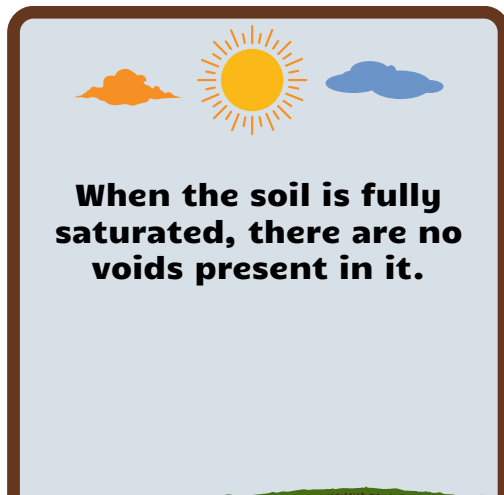
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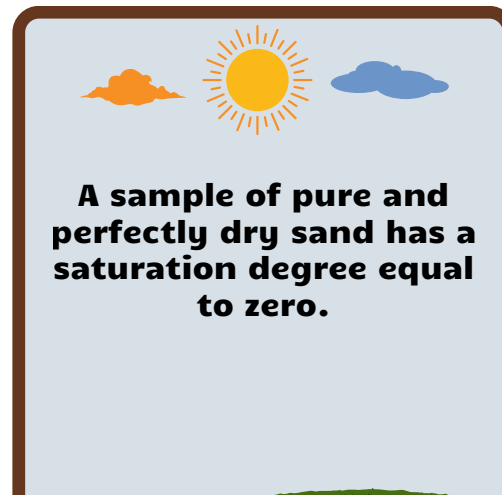
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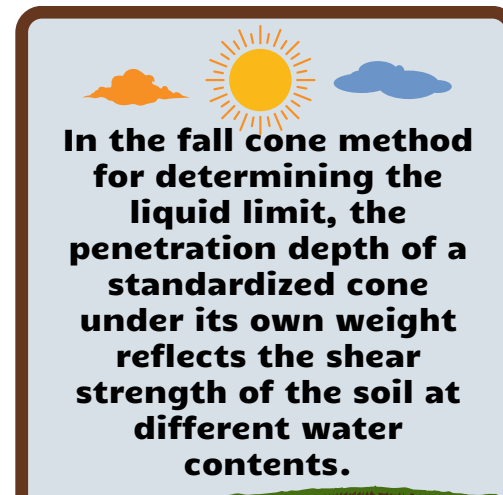
Answer: False. It is less compressible.
Reward: advance 4 squares
Punishment: stay where you are



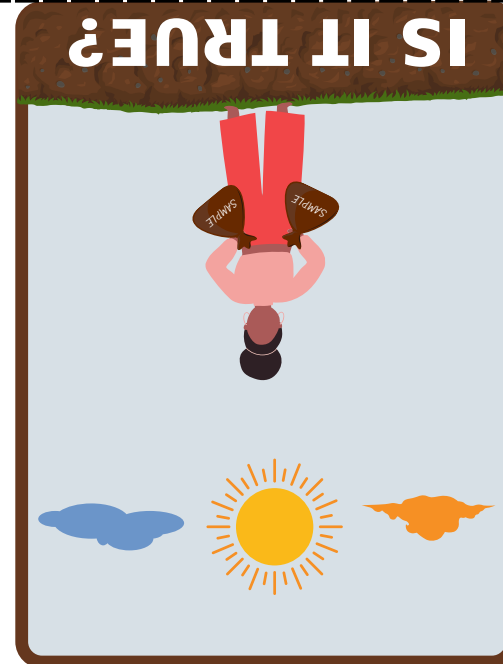
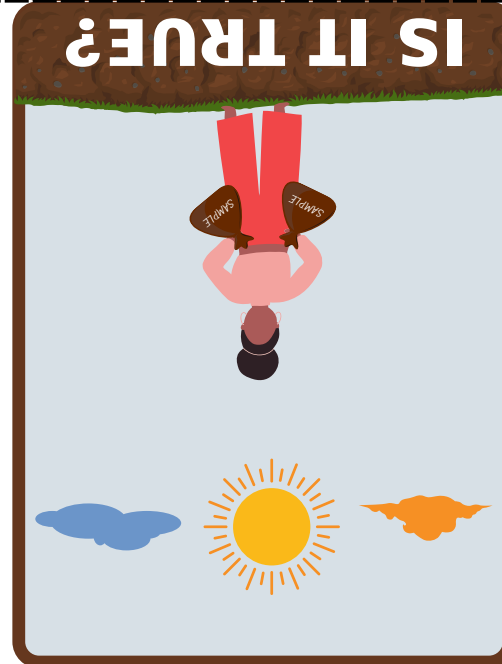
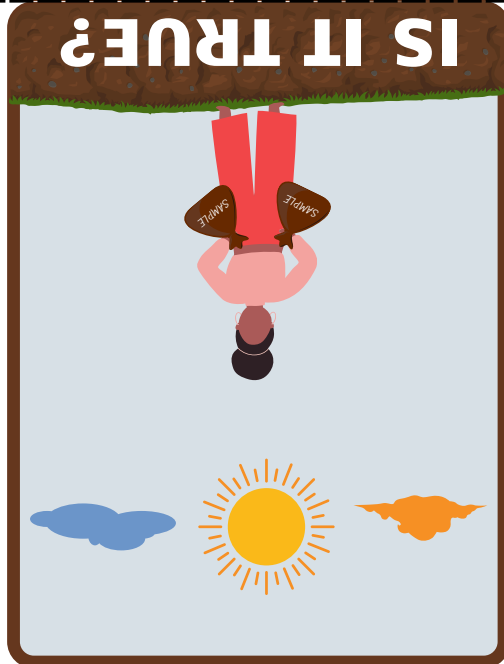
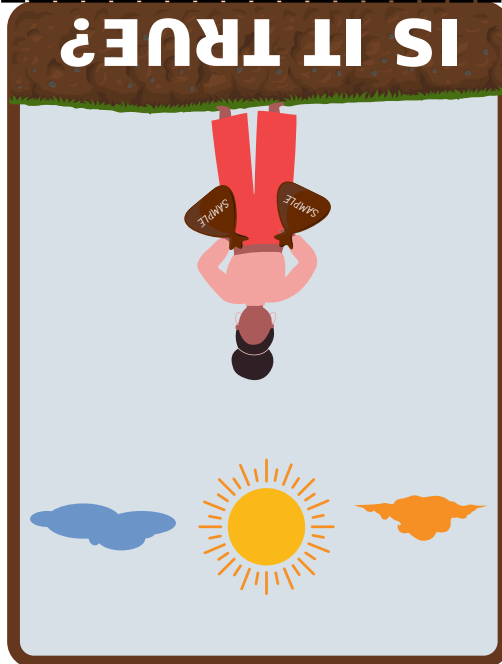
Answer: False. Voids are filled with water.
Reward: advance 2 squares
Punishment: stay where you are



Answer: True
Reward: advance 4 squares
Punishment: stay where you are



Answer: True
Reward: advance 5 squares
Punishment: stay where you are



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The higher the non-Uniformity Coefficient, the poorer graded the soil is.

Answer: False. Soil is well graded.

Reward: advance 5 squares

Punishment: Go back 1 square



You collected a soil sample on a sunny day. After that, it rained a lot at the collection site and you had the idea of extracting another sample to compare with the first. From this, you concluded that the only difference between the two samples is the water content.

Answer: False. Several factors may have changed, such as void ratio and porosity.

Reward: advance 3 squares

Punishment: Go back 1 square



The uniformity coefficient is given by the ratio between D60 and D10.

Answer: True

Reward: advance 3 squares

Punishment: stay where you are



Although laboratory tests may not fully reflect field conditions, they offer greater accuracy in the results due to the strict control provided by the laboratory environment and the sophistication of the techniques employed.

Answer: True

Reward: advance 5 squares

Punishment: Go back 1 square



IS IT TRUE?



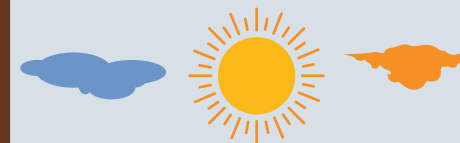
IS IT TRUE?



IS IT TRUE?



IS IT TRUE?



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A Curvature Coefficient smaller than 1 indicates a well graded soil.

Answer: False. It indicates that soil is poorly graded.
Reward: advance 4 squares
Punishment: stay where you are



For the sieving of a soil sample, only one sieve should be used so that the results are reliable.

Answer: False. More than 1 sieve is used.
Reward: advance 5 squares
Punishment: Go back 1 square



The Curvature Coefficient is used to detect the shape of the soil resistance curve.

Answer: False. It is used to detect the shape of the particle size distribution.
Reward: advance 3 squares
Punishment: Go back 1 square



The particle size distribution, liquid and plastic limits tests are important for soil classification.

Answer: True
Reward: advance 3 squares
Punishment: Go back 1 square



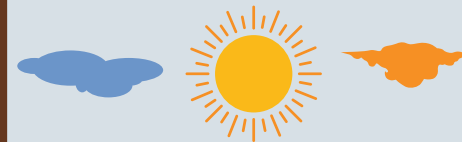
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IS IT TRUE?



IS IT TRUE?



IS IT TRUE?



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Holly peat, You did very well in the lab last week! Advance 3 squares.



Congratulations! You managed to classify the soil sample correctly. Advance 2 squares.



Ops, You spilled water on the soil sample that was drying. Go Back 1 square.



You really impressed everyone determining the plasticity limit. Advance 3 squares.



MYSTERY



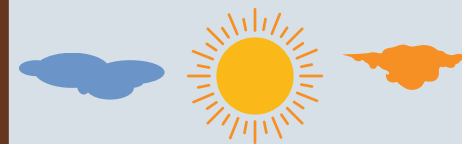
MYSTERY



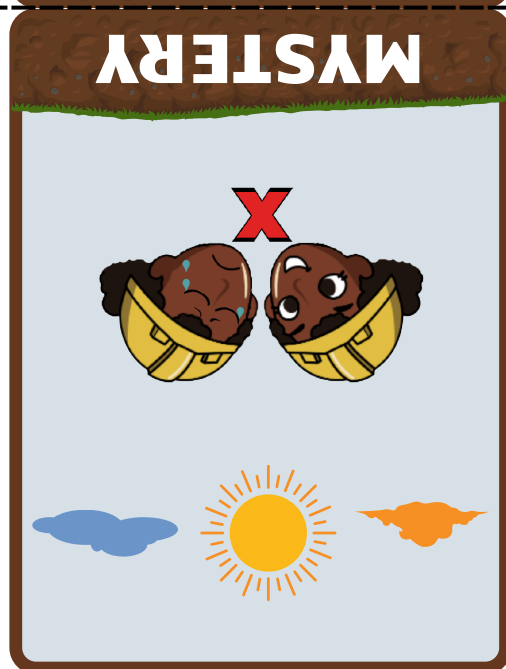
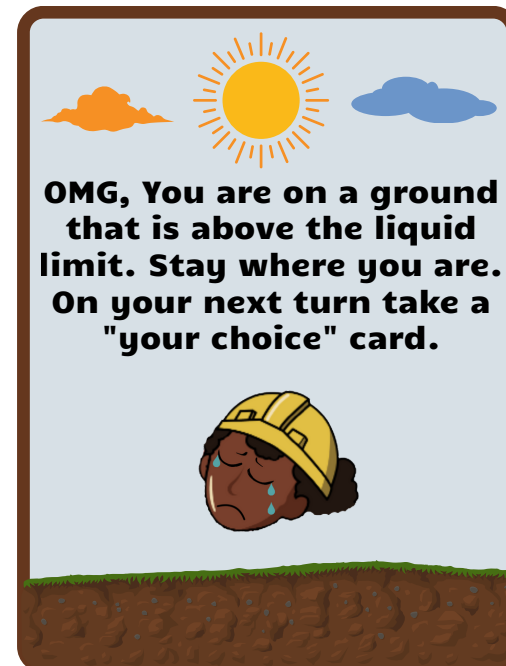
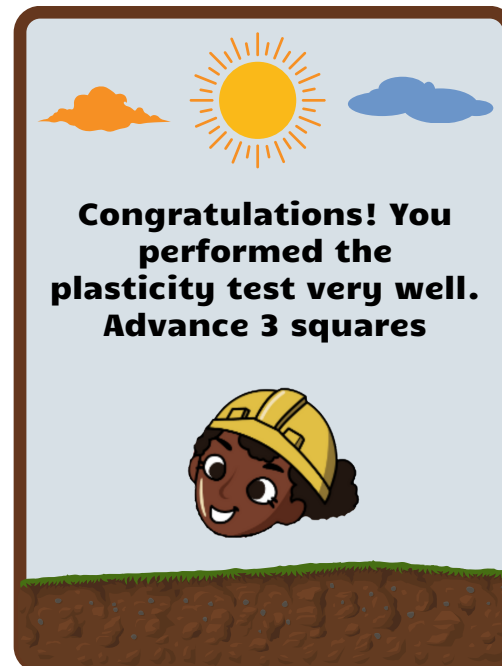
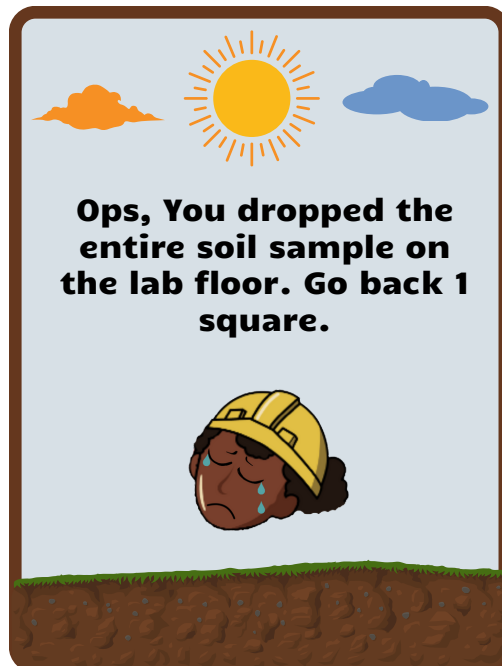
MYSTERY




MYSTERY






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You missed the particle size test report! Stay where you are. On your next turn take a "is it true?" card.



Congratulations! You have correctly calculated the soil plasticity index. Advance 2 squares.



Oh-Oh, You misclassified a soil sample. Go back 1 square. Pay attention next time!



You are on your way to become a MSc in Geotechnics! Advance 2 squares.



MYSTERY



MYSTERY



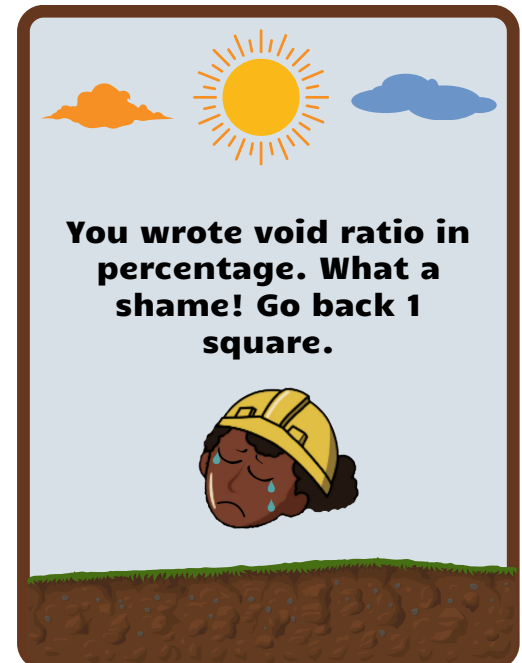
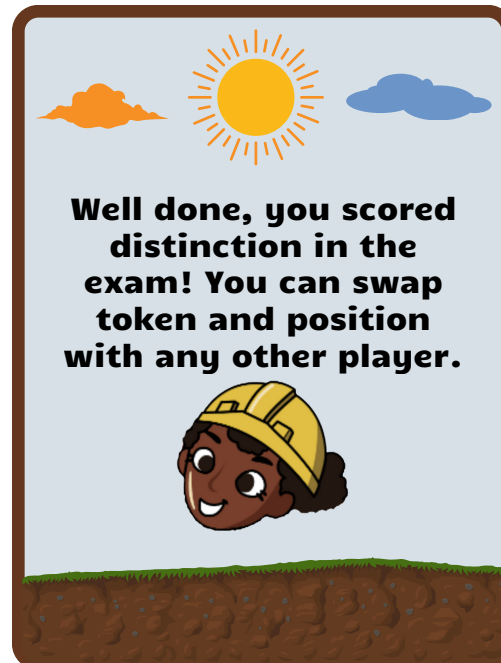
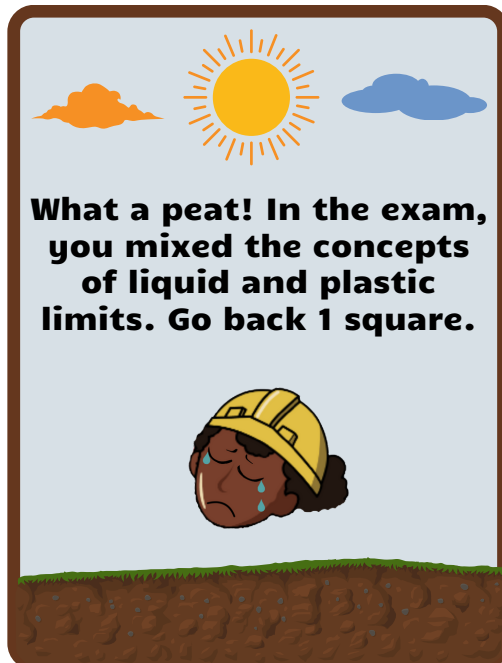
MYSTERY



MYSTERY



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**Whooo!!! Your lab report
was brilliantly done.
Advance 3 squares.**



**Congratulations! You've
found the missing
particle size test report.
Advance 2 squares.**



**You have correctly
calculated the soil void
ratio! Advance 2
squares.**



**You missed all lab
classes. What's wrong
with you? Go back 2
squares.**



MYSTERY



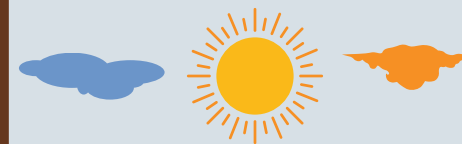
MYSTERY



MYSTERY



MYSTERY



Fold
and glue



While collecting a soil sample in the field, you tripped. You poor thing! Advance 1 square and look where you're walking.



Oh, no! You went into the lab without closed shoes. What a junior mistake! Go back 1 square.



Congratulations! Your group presented a great seminar. Choose a player and advance 2 squares each.



Congratulations! You have correctly obtained the particle size curve of a soil. Advance 3 squares and choose another player to go back 2 squares.



MYSTERY



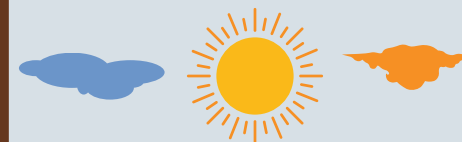
MYSTERY



MYSTERY




MYSTERY




Fold
and glue




Gee, you messed up all the sieves. Go back 1 square.





Oh, no! You shook the bench where sedimentation tests were taking place. Go back 1 square.



Well done, You left the lab spotless. Advance 1 square.





You ate a sandwich in the middle of the lab. That's not allowed! Go back 3 spaces.



MYSTERY



MYSTERY



MYSTERY



MYSTERY

