

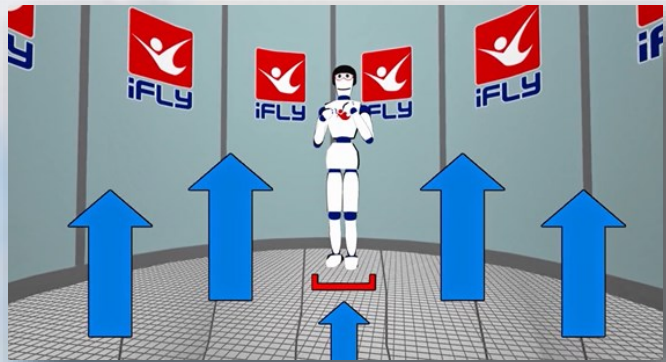
QUESTION 1

iFLY wind tunnels use state of the art technology to simulate the incredible feeling of skydiving, without jumping from a plane. What is another name for Indoor Skydiving?

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QUESTION 2

Why does the iFLY Instructor (pictured right) not lift off the cable net floor?



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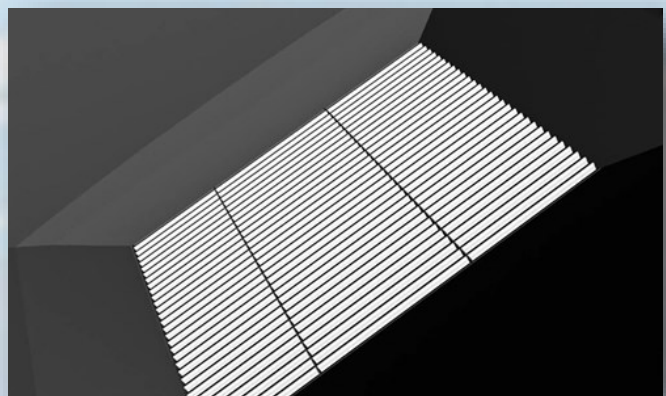
QUESTION 3

How many electric fans do iFLY have to create the powerful wind?

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QUESTION 4

What do the turn vanes (pictured right) do to the air to make it smooth, like brushing your hair?



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QUESTION 5

How many turn vanes will the air pass through once it has completed a full circuit of the wind tunnel system?

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QUESTION 6

How many fans do iFLY have in the basement?

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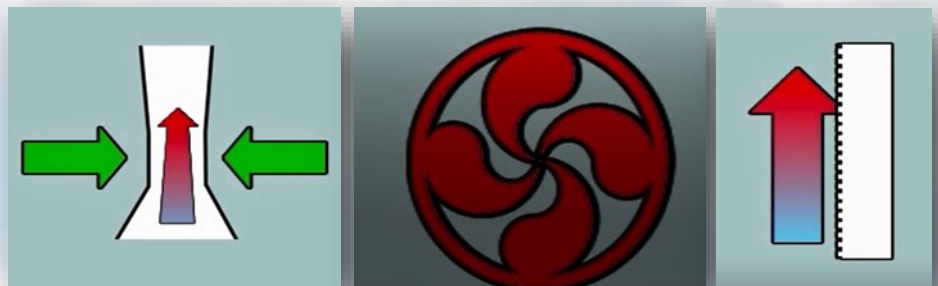
QUESTION 7

What stops flyers being sucked up to the ceiling?

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QUESTION 8

What are the three factors (pictured right) that cause the temperature of the air to heat up?



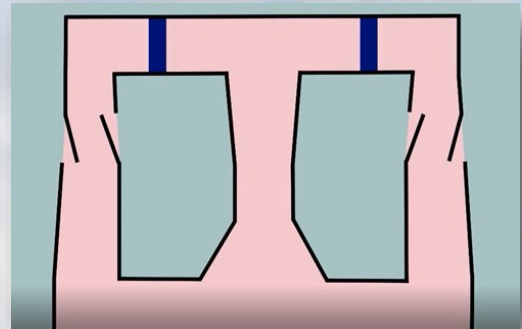
1)

2)

3)

QUESTION 9

What is the name given to the part of the tunnel (pictured right) that opens and closes to alter the temperature of the air?



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QUESTION 10

When a skydiver jumps out of a plane, what is the name of the force that pulls a skydiver toward the ground?

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QUESTION 11

At the point a skydiver stops accelerating during freefall, what have they reached?

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QUESTION 12

What is the equation to calculate terminal velocity?

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_____ = Terminal Velocity
.....

QUESTION 13

How long does it typically take for a skydiver to reach terminal velocity?

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QUESTION 14

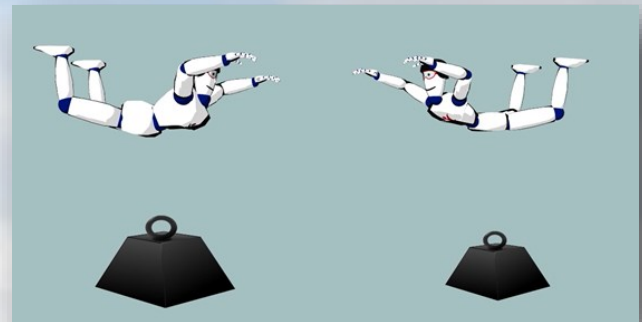
Fill in the blanks:

Air d _____ affects the freefall speed of a skydiver.

Air is t _____ at higher altitudes, so a skydiver will fall f _____.

QUESTION 15

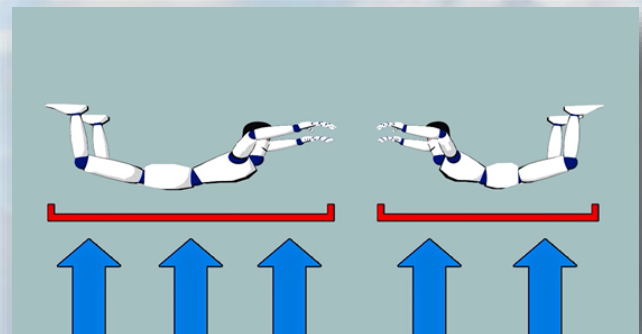
Which flyer (pictured right) will fall faster, the lighter or heavier one, and why?



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QUESTION 16

Which flyer (pictured right) will fall slower, the taller or a shorter one, and why?



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QUESTION 17

What 3 body parts can a flyer use to control their speed and direction of movement?

1)
2)
3)

QUESTION 18

A flyer can change their body shape so that they fall faster or slower. What change are they making to their body to cause this?

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QUESTION 19

A skydiver's surface area causes resistance to the air. What is another name for this force?

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QUESTION 20

What do you not need to pack in your bag when you come to iFLY?

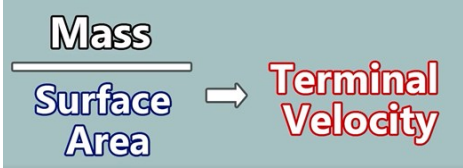
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QUESTION 21

How best can you experience the amazing physics behind body flight?

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- 1) *Body flight.*
- 2) *Because the Instructor is not presenting enough body surface area to the wind to be lifted up.*
- 3) *4.*
- 4) *They reduce turbulence (by straightening the air, like how a comb brushes through hair).*
- 5) *4. (The iFLY buildings actually contain 8 turn vanes, but as air goes either left or right as it reaches the top of the flight chamber, each particle passes through only 4 turn vanes to complete a full circuit).*
- 6) *None. They are all in the roof.*
- 7) *The shape of the tunnel (the wind tunnel walls get wider as it gets taller, so the speed of the wind slows).*
- 8)
 - *Friction of the air passing over the walls and through the turn vanes.*
 - *The heat generated from the fans themselves.*
 - *Compression of the air as it gets drawn into the flight chamber.*
- 9) *The Louvers / Vents.*
- 10) *Gravity.*
- 11) *Terminal velocity.*
- 12)



The diagram consists of a light blue rectangular box. Inside the box, the word "Mass" is written in black text above a horizontal line. Below the line, the words "Surface Area" are written in blue text. To the right of "Surface Area" is a white arrow pointing to the right. To the right of the arrow, the words "Terminal Velocity" are written in red text.
- 13) *7 – 10 seconds.*
- 14) *Air density affects the freefall speed of a skydiver. Air is thinner at higher altitudes, so a skydiver will fall faster.*
- 15) *The heavy flyer, because they have a greater mass.*
- 16) *The tall flyer, because they have a larger surface area.*
- 17)
 - *Arms.*
 - *Legs.*
 - *Torso.*
- 18) *They're changing their surface area.*
- 19) *Drag.*
- 20) *A parachute.*
- 21) *Give iFLY a go!*