



S M A R T H I N K I N G

Online Science Tutoring

Help your science students achieve success by reinforcing concepts presented in the classroom.

SMARTHINKING's e-structor® certified tutors, acting as your personal teaching assistants, help students master underlying science concepts. Tutors and students work on your assignments and your

curriculum. Our tutors do not provide complete solutions—they guide students, with the goal of facilitating insight. Students gain the understanding to complete their assignments on their own.



SMARTHINKING Wins Codie Award

SMARTHINKING has won the prestigious Codie Award for Best Instruction Solution for Students at Home, given by the Software Information & Industry Association (SIIA). This award recognizes SMARTHINKING as the best educational technology system to extend traditional learning outside the classroom.

The Codie Award is a great honor for SMARTHINKING, confirming our mission that high quality academic support can be delivered on demand, any time, via the Internet.



On-Demand, Online Science Tutoring. SMARTHINKING's online tutors provide one-on-one tutoring when students need it, on any Internet-connected computer.

Student-Centered Learning. SMARTHINKING's online science tutoring engages students and provides positive reinforcement. Our tutors guide students, using the Socratic method, posing probing questions to promote active learning.

Technology that Brings Concepts Alive. SMARTHINKING's proprietary tutoring software facilitates highly interactive tutoring sessions. Tutors and students explore science concepts together, using a palette of tools to draw diagrams, post pictures, and construct tables and charts.

Convenient and Easy Access to Expert Tutors. SMARTHINKING's experienced, e-structor® certified tutors have advanced degrees, with most having a masters or PhD in their tutoring-related field. Tutors must pass a thorough screening, and receive ongoing monitoring and training.

Science Tutoring is Available in . . .

- Chemistry
- Organic Chemistry
- Physics
- Biology
- Intro to Human Anatomy & Physiology

Here are examples of SMARTH

Organic chemistry is a challenging course, presenting students with terminology and concepts that are new and perhaps difficult to comprehend. And since organic chemistry is required for entrance into many health profession programs, students are under great pressure to pass the course. Our expert tutors are sensitive to students' concerns and work with them to clarify concepts. Students may also receive help in general **chemistry**.

SMARTHINKING's tutor (in blue) guides the student (in red) through an organic chemistry problem, using a virtual whiteboard equipped with a variety of drawing tools, as shown below.

My name is Karen. Can you help me please?
This is from my homework.
Identify whether the configuration at the chiral carbon is R or S.

CH₂OH
OH
CH₃
Br

What have you done on this problem so far?

Well, I am a little confused because all the examples from class have an H, but this one doesn't. I don't know where to start. Usually I would make the H the #4 group to start.

Do you know your priority rules for the different groups around the chiral center?
I know you use the mass or something like that.

Good... and where does hydrogen rank in the priority rules? lowest, it's lightest.
What would be the next lowest ranking group in your molecule above?

Well, I think it would be CH₃. good!

if that is lowest priority, use it just as you would the hydrogen, and assign configuration.

Like that?

CH₂CH₃
OH
CH₃
Br

Are you saying that the ethyl carbons are a higher priority than the hydroxyl?

yes, that group has more mass...

lets look at this from the point of the stereocenter, what is the next atom immediately next to the stereocenter, which would be higher priority?

you mean compare the C and the O? oh! the O is higher priority than C. Great!

So the priority 3 group is the ethyl and the OH is priority 2 group correct.

OK, I fixed it. So what would the config be? R or S? I get it to be R.

Good job, thats it.

Cool! Thanks Jason!

Do you have any other questions today Karen?

Well, I might, but I'm going to work on these some more on my own first.
I might be back later! Thanks again! Bye...

During SMARTHINKING's online tutoring carefully with students, one-on-one, to ensure SMARTHINKING's virtual whiteboard can be used as a tool to help students visualize problems and concepts. SMARTHINKING also tutors students in a variety of subjects, including **to Human Anatomy & Physiology**.

Here, a SMARTHINKING tutor (in blue) guides the student (in red) through a genetics exercise in genetics.

I have a question on genetics II. Hello welcome!

Assume in a guinea pig that straight fur is dominant to curly fur (S = straight, s = curly) and black fur is dominant to white fur (B = black, b = white).

a.) list all the possible genotypes for an animal that is heterozygous for both traits (heterozygous for both traits).

Ok, so S = straight s = curly B = black b = white right?

right, yes that is correct!

Ok, start with the easier one (the homozygous).

SSBB That is right, now instead of working with homozygous, leave one trait homozygous (leave for instance heterozygous). SSbb

Great, that is two, let's find a third. What would you like to do next?

Correct, and we still have another one. Which is it right because it is bb. So no, another one.

Hint: complete heterozygous SsBb

ok, and the one that really gets me is the one I want to complete a dihybrid cross for 2 guinea pigs that are heterozygous for both traits along with their phenotypes.

Ok, first identify the parents. They are both heterozygous SsBb

SsBb Correct. This problem is solved with a square.

gam	SB	Sb	sB	sb
SB	SSBB	SSBb	SsBB	SsBb
Sb	SSBb	SSbb	SsBb	Ssbb
sB	SsBB	SsBb	ssBB	ssBb
sb	SsBb	Ssbb	ssBb	ssbb

Great! Now the hard part. Pick a color and start with the trait on the left that looks light a red light.

what do you mean by the same phenotype?

Straight, black hair = 9

next needed, just say how many. Good!

Straight white hair = 3 Great!

Curly black = 3 Awesome, and the easier one is 3.

Correct. When you put all these numbers together you write it in the way I wrote it okay dont understand?

Maybe I'm not explaining myself. The ratio you got that is a very common ratio for mandelian inheritance.

Great! Well this is where it comes from. okay

Did you understand? yes

That's great. Did you have more questions?

no, but thank you for all your help. Hopefully this helps me.

I'm sure it will. No problem. Come back when you need it.

SMARTHINKING's live, online tutoring.

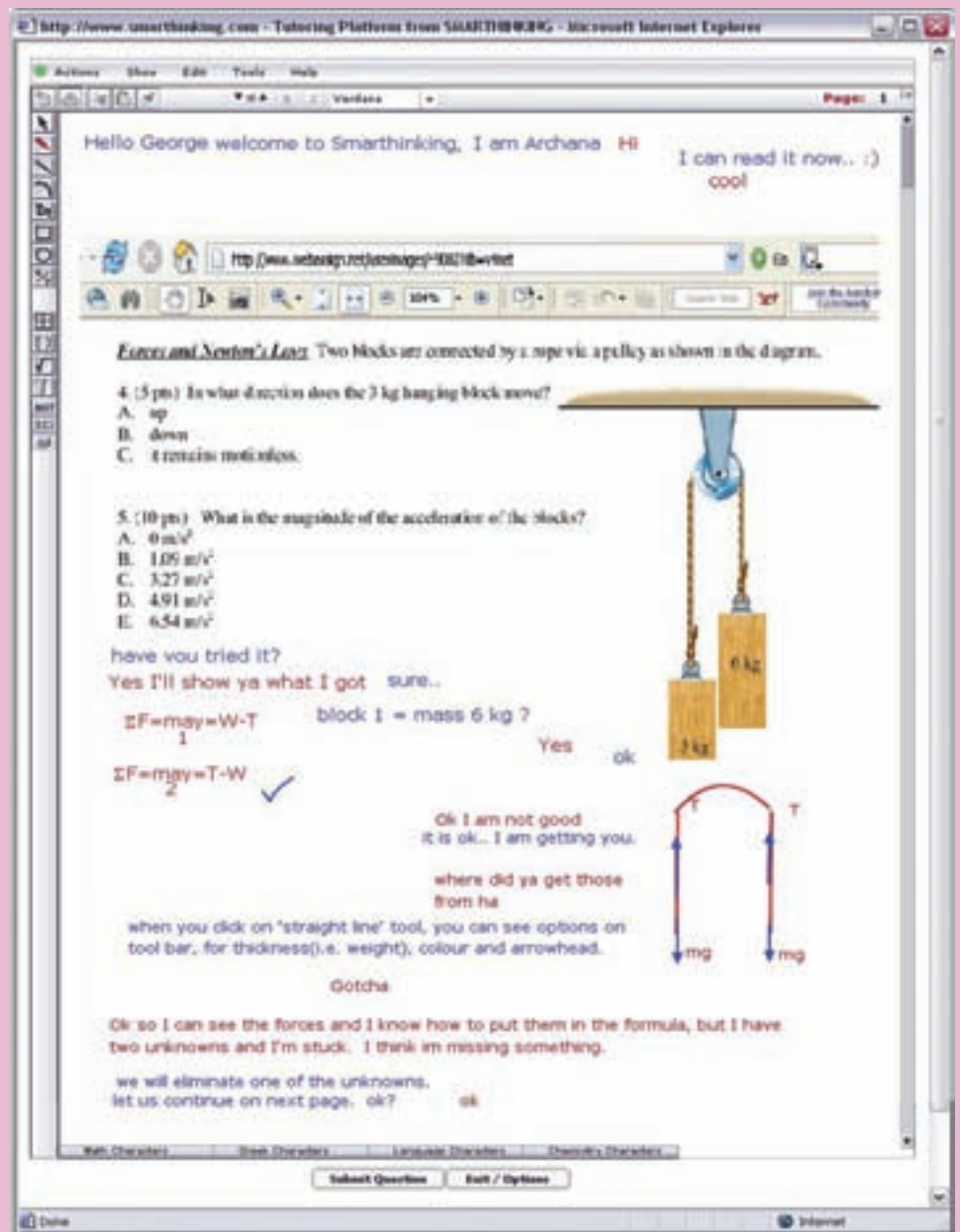
Sessions in **Biology**, tutors work to ensure comprehension of the material. SMARTHINKING contains a versatile palette of instructional tools to help students gain greater understanding. In a related course, **Introduction to Physiology**.

SMARTHINKING guides a student (in red) through an



Physics tutoring helps students solve a specific problem by exploring the underlying physical laws and equations. SMARTHINKING's tutors reinforce material presented in the classroom and text, using diagrams, pictures and analogies. Armed with a greater conceptual understanding, students are able to complete assignments on their own.

SMARTHINKING tutor (in blue) guides a student (in red) through a problem involving force and Newton's Laws shown below.



As the leading provider of online tutoring,

SMARTHINKING gives students academic support 24 hours a day, 7 days a week. Drop-in tutoring hours vary by subject and by season.

Math

Basic Math
Algebra
Geometry
Trigonometry
Pre-Calculus
Single-Variable Calculus
Statistics

Writing

Essay Critique
Grammar and Mechanics
Pre-Writing

Science

Intro to Human Anatomy & Physiology
Chemistry
Organic Chemistry
Biology
Physics

Business

Accounting
Economics
Introduction to Finance
Statistics

ESOL

ESL Writing Center
Math in English/Spanish

Spanish

Spanish Essay Center
Grammar Questions

Go to
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tutoring schedule.

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