

Survey of Student Views on Astronomy

Open-ended questions:

Please answer the following questions in as much detail as possible.

1. Is astronomy personally meaningful to you? If so, describe how.

No
Yes it is personally meaningful. We live in the universe so I feel it is important to study and understand it.
No
Yes, to know about other things that are not on Earth seems very interesting. It amazes me how astronomers can learn so much by something that are so far away.
It is important because the way we are situated in the universe an how everything is orientated allows humans and life to be supported. Example, we are a perfect distance from the sun where life can be attained.
I believe that it is important to know how we are able to live on earth. I want to understand the universe in a deeper meaning than just looking at space.
No, not at the moment.
Not greatly, I enjoy looking at the stars and wondering about the rest of the universe, but it has never been a field that has captured my full interest. I don't see the connection always between astronomy and my life here on earth.
Yes, I think it is an interesting subject, however, I don't know much about it
I guess I've always enjoyed looking at the stars thinking about them, but not much beyond that.
Right now, it doesn't mean that much to me. Besides knowing that I live in the universe that's about it
Sure, I love stars and would like to know more about them and other things around them (planets, etc.)
Astronomy is, in some way, meaningful to me. Not significantly by all means, but I do look at astronomy and correlate the physical universe and space w/ my religion and the basis that there is a God. I use looking and observing space and stars as a form of meditation and admire the physical universe as a whole. It's beautiful.
Yes, I find the subject very interesting. Understanding the rest of the universe will give us a greater understanding of our own planet and solar system.
The extent of the meaningfulness of astronomy to me would be that of a hobby. For actual application of astronomy, I believe it has very little practical purpose`
Yes I find astronomy very interesting and enjoy learning about how the universe was created. I also enjoy learning about what other objects are out there and what they do. Stars, planets, asteroids, etc.
Yes, astronomy is quite meaningful to me. When I look at the stars and galaxies, I cannot help but be overwhelmed with God's power and wonderful ability to create beauty. The skies are a gift from Him to us, & I'm very thankful for that.
Astronomy is somewhat meaningful to me. I understand how it directly affects my life and its importance
I find astronomy interesting; however, I do not think it is meaningful to me
No
Yes, I work at a camp in northern wisconsin and I have to point out or show the constellations to campers sometimes.
I find it interesting to see what else is out there and that the world we know is not all that there is. In a sense I'm one of those wondering about other forms of life to better understand mine. I've always loved the stories that go long with the constellations. I think looking at the sky is one of the most beautiful things in science.
No not really. I just thought this course would be interesting.
I am interested in celestial bodies such as black holes. I enjoy physics and I'm fascinated by the vastness of the universe and the physics that I've learned about it so far.
Yes, knowing how universe works and the object like star how they are born and die and what they are

made of is very interesting.
Yes, because I am curious about what is beyond our planet.
Yes, we are all a species attempting to answer many questions about our existence and why or how we came to be. We know a good amount about our existence, Also, knowledge is power and I seek knowledge and information about many things. Space is very mysterious, large, and vastly unknown. I'd love to know more about it.
I think astronomy seems interesting, however I don't see yet how it personally effects me.
Since we are affected by many things that exist in the universe, and astronomy is indeed meaningful to me.
I believe that to understand ourselves we must first understand (or at least try) what is around us. Even if it's things that are a long ways away.
Astronomy is somewhat meaningful to me. I would say it's more interesting than meaningful to though.
I've never really had any personal experiences with astronomy other than looking at the stars
Astronomy is personally meaningful to me because we as humans live within the universe and I believe it is important to know facts and information about the celestial objects, space, the physical universe, and how everything works.
Yes. I think Astronomy is interesting and deals a lot with the origin of life and what other possible life can be out there
Yes, my dad loves astronomy and so I feel that we have that connection together. I also think its cool that two people in a different areas can look up at the same sky
Not really
No
I would say that astronomy is personally meaningful to me in several ways. First of all I have always enjoyed star gazing. I also am a huge sci-fi fan. But to me astronomy is a way of finding answers. The universe is full of known-unknowns... we know that there are things out there that we don't know about yet. Astronomy is the key to discovery.
I don't know how it personally meaningful, but I do believe it is important to understand the space around us and why things happen. How we are able to survive on this planet. Also I think this is important to understand the differen types of stars.
Yes, I enjoy looking at the stars. I find peace when I go yp north, away from cities, and can see all of the stars on a dusk night.
Not on a personal level
I feel it's important for us to have an understanding of our surroundings outside of earth, so yes.
Yes, astronomy interests me. I enjoy learning about things that are out of the world.
No.
Yes, by the nature of curiosity, astronomy fascinates me. How our universe came to be, how our galaxy is set up, the solar system. Each presents so many more questions and fully enhances my intellect. I'm amazed at all of it. Also, stargazing is a favorite of mine, and I've always wanted to know more constellations.
Yes, I feel that a vast amount of knowledge about the world is acquired through the study and observations of stars and planets
Yes, because I'm considering a career in physics with an emphasis in astronomy.
I think it is meningful to me because it helps me understand my physical place in the universe and what is going on around the Earth and beyond.
Yes, I am interested in the way the universe works. Plus, I am a PHY major
Yes it is. Astronomy is discovering more answers to life every day. Outer space is the biggest mystery there is.
No
No
No, but it looks really interesting and I would like to learn more.
I am not necessarily interested in the science of stars galaxies, but I certainly like to admire the beauty of them. I would not object to learning, obviously, how they came about and the beauty of them

Yes, it is a subject I am considering for a major.
Not particularly meaningful, but it is interesting to me
Stars, galaxies, and space are interesting to me. I enjoy watching TV shows and reading about astronomy. I do not have a major, but I am thinking of it as a possible major.
Yes, I like astronomy quit a bit. It has always interested me
Yes, I often enjoy thinking about life and its origin, and the possibility of infinite time and space.
Yes, because it's part of God's creation and I am completely fascinated by it
When studying or watching the objects in our universe, I get a wonderful sense of grandeur. A feeling of connectedness (sic) and awe. So I would say it is meaningful to me.
Not personally meaningful at this point because I have idea about it. It has always interested me, but seems to "far away" to be meaningful.
Astronomy is not personally meaningful to me, however I do enjoy reading my horoscope and looking at the stars.
Though I know little about Astronomy, I am very curious to learn about the physical universe around. I hope this class can be relevant by silencing some of the big questions floating around in my mind.
Yes, I had an uncle that showed me a lot about our universe

2. What aspects of astronomy do you notice / encounter in your life outside this class? Try to think of and briefly describe at least one, even if you think it is only vaguely related to astronomy.

I notice the stars and their formations
We live on the earth, a celestial object, and how this interacts with the sun & moon is important in everyday life. Day, night, seasons.
Start gazing, moon and it's phases, sun and sunshine
You are always looking at the stars at night and often wonder about their existence.
Stars in the night sky and the moon. The constellations and the old myths that go along with them. (Not astronomy) Also, the sun, what lights the earth enabling everything/life
Seeing a "shooting star." Knowing where it came from, how fast it was moving, and how long it has been on a collision course with earth.
Shooting stars, constellations, the movement of the sun.
Stars/star gazing. NASA explorations.
I like to stargaze when I'm up north.
Well, the sun is star. Pretty much all life depends on that, So I would say that is something I encounter on a daily basis.
I like to look at the stars and find constellations
I like to look at stars at night and I love the time of year when a planet is visible
Outside of class, I enocunter the observation of stars and objects as a form of meditation in my life.
Astronomy merit badge (boy scouts). Have read Hyperspace by michio Kaku multiple times.
Stargazing is one aspect of astronomy I sometimes encounter in my life
Obviously everyone sees stars and the moon on a regular basis. Other than that I know form my previous astronomy course that something we use on an everyday basis were created originally for space travel. I can't think of any specific technology at the moment except for satellites.
People used to depend on the stars to navigate on and at sea during the night. Some people believe in receiving their fortunes from the stars.
I notice the effects of the earth's rotations in relation to the sun. I often notice familiar star groupings
Star Gazing
I have looked at the stars and I know of the big dipper, little dipper and orion's belt.
Constellations and the sun
Like I mentioned, I have always loves stories about constellations. As a child I used to know so much about all of them and regularly stargaze, trying to see planets, meteors and comets and identifying them. I used to go to the planetarium a lot then too, but haven't really thought about it n 10 years
When I think of astronomy I think of the stars, like one time I took my now ex-girlfriend stargazing on

the top of a hill, all though it is a memory I'd like to forget.
On clear nights I tend to stargaze. I could just stare at the night sky for hours, checking out the star clusters and trying to pick out planets.
Watching meteor showers, I don't know if that one is or not.
I notice the star patterns a little. The phases of the moon are also aspects that I notice
Global warming impacts us greatly we're destroying our planet and we need a plan to reverse it. That has a lot more to do with our ozone layer and such but the sun's heat comes into play. Possible life elsewhere in the universe would impact us.
How the universe came about.
When watching a meteor shower it has always interested me what is happening and why that is happening. Perhaps that is astronomy related.
In 8th grade I got my first telescope and it came with a map so I spent days looking at the moon.
I guess you look at the stars it's referring to astronomy. The sun shines that's astronomy, and the cycle of the moon.
The only things that I've really done regarding astronomy, as I stated before, is look at and enjoy the stars
An aspect of astronomy that I encounter in life is the stars. The stars make up things like the big dipper and the small dipper.
Hearing about different missions to planets or technology that is developed. Meteor showers - cycles of the moon and when different eclipses will occur
I always like to try and follow the space shuttles
If I were to become lost in the wilderness without a compass, the study of astronomy could help provide some kind of navigational help
I often go camping and hiking in the summer. One of the ways I often use to find where I'm going is by using the position of the sun or the north star.
I'm not sure.
Stars, moon, lunar eclipse
I notice the sun/moon in the sky everyday and the stars every night
The moon and how it affects our weather
The sun, which is a star, gives me light and life everyday.
On a clear night seeing the constellations and wondering what they are.
The sun, the moon, the stars. All of the objects that appeal to me at night always catch my attention.
The concept of days, years, birthdays
The sun, moon, and stars that we see throughout the day
Every day and night I notice / encounter the changes in the sky.
Day, night, winter, spring, summer and fall are directly related to astronomy and how planets and stars (our sun) work.
My cousin wants to learn more about the world around him and the stars are the thing he asks about the most.
Stars, weather, and the sun
My friends and I enjoy star gazing from time to time
Moon (waxing, waning, etc.), Planets (My dad points them out sometimes), Stars (Can sort of make out constellations like big and little dipper)
I am not sure how or if this makes sense, but I like to look at the stars. That I think is the only thing other than seeing or hearing about stars or galaxies in movies.
Stars, moon, sun.
Stars and planets, night sky viewing and the moon
I notice the stars in the night sky.
I notice that mythology, one of my largest interests, has heavy ties to astronomy. I also notice that other people in my life have a great love for astrology.
Well, I believe there is some astronomy in the "Men in Black" series. That is where I found out about Orion's Belt. I once camped in my backyard, and knowledgeable friends of mine helped me locate the big

and little dippers and the North Star.
I notice the stars but not so much here at school because of all the lights that are left on at night. Once my friends and I had this long decision about the moon because they claimed that the circle around the moon that night was a moon bow when it was actually a halo
I encounter the lack of visible stars when I am in a city. I love to be the stars when I visit home (?)
The sun- it's a star that fuels everything we do. The moon? I enjoy watching shooting stars
I encounter reading my which I think realtes to astronomy, but I notice and enjoy the stars at night.
Examining the sky and reconsidering the scale at my world and myself.
The stars. They are beautiful and fun to look at. My uncle was named after one. He was also given one after he passed away.

3. Describe a time in your life when you acted in some way like a scientist. Try to think of and briefly describe at least one, even if you think it is only vaguely related to science.

chemistry in high school
Any problem that needs to be solved can be seen as acting like a scientist.
I observed the hunting tactics of an osprey once while fishing
I had to act like a scientist pretty much in every science class. Doing experiments and proving your hypothesis right.
Trying to figure out why somethings did what they did. Use of physics. Also figuring out what had happened to someone or myself is we/I were sick
I tested different laundry detergents to see how clean they got my clothes.
Problem solving/experimenting when I encountered a dilemma.
I always try to find the best routes to and from locations whether it be on foot, car, or bike. I have to take different routes and determine which route is best in somewhat of a scientific method
When I was in limnology we went with the DNR out on the Mississippi and took all the measurements they do on a daily basis.
During deer hunting, while gutting a deer, seing that was inside the deer and how it all fir together.
The only time in my life in which I have acted in some way like a scientist was in a school setting. Mostly in high school. I generally don't take on the role of acting like a scientist.
I suppose I was acting like a scientist when I went around surveying political window displays Obama-250, McCain-57
The time when I was most like a scientist was back in 6th grade during the science fair. I investigated Bernoulli's principle as it pertained to submarines
I have acted like a scientist in many science classes, but many other classes as well by observing and collecting data.
Identified trees by leaves and bark (observations)
I have used the scientific method to hypothesize and test the effects of the extreme cold on various objects and food
I looked through a telescope at the sky at night.
In biology lab we tested and made experiments and did hypotheses
I use the scientific method quite often even w/o thinking about it. It's a part of the way I process any situation in life
I think back to high school chem.
I've done many research projects on science related topics and even used similar research methods, such as applying existing theories to readings.
Scientist in general observing nature around me I guess. Try to discover the way things work or what happened in the past.
I acted like a scientist when I did labs in college, high school, and middle school. I did experiments and recorded the results.
I ask myself why often. I attempt to figure out why something does such things or behaves in certain ways. I make crazy theories and use process of elimination to work out certain ideas. I can't think of a specific example at this moment.

When I stumble across an obstacle, I try to problem solve by thinking of the different solutions.
I wonder how long it would take to get to a certain star that I saw.
In my previous science courses, conducting experiments.
My senior year of high school I did a sleep deprivation study where a group of friends and I stayed up for 70 hours. We documented and recorded our experiences, and then presented them in psychology class
A time I tried acting like a scientist was when I compared fossils that I found in a quarry.
Whenever I have an equation that I need to figure out, if I eventually figure it out I feel like a scientist
I have taken many biology and chemistry classes which require critical reasoning and problem solving
Obviously throughout High School I have participated in many science classes in which I had projects that required me to act like a scientist. One astronomy related project required me to draw a star chart.
In fourth grade a group of friends and I created a volcano and figured out ways to make the eruption bigger it was a lot of fun.
I conducted an experiment with rising hot air in middle school for a science fair
Science class and how we did the scientific theory and such
I navigated through celestial star bodies in the sky such as the big dipper, Cassiopeia, Orion's belt.
In biology we did samples from a pond for bacteria.
Well, I like to think that we act like scientists pretty much every day. We all observe, analyze, and interpret everything we encounter. And based off of that process we form conclusions and we continually could upon them and improve them. But to me more specific, exercising ? we ? become very scientific. What works for me, what provides the results I want, etc. All derives from the scientific method.
When my kitchen sink was clogged I diagnosed that there was a build up and I took apart the pipes myself and unclogged it.
Anything I have done to problem solve. Any science course I took in high school that involved a lab. Even making food in the kitchen because you are mixing things
In my previous science courses I feel like I have acted like a scientist while solving problems.
This is my 5th lab course in this university. Every time I enter the lab I become a scientist.
labs in high school. Proving/disproving hypotheses
Science class is the only one that comes to mind. I suppose when I lose something or need to solve a problem, I think scientifically.
When I try solving computer problems for others I test a hypothesis experiment and determine the different variables.
In science classes mostly
I have taken many science classes previously in high school and I was required to use the scientific method.
I came up with explanations for why things happen and see how different actions influence the results with people and things often
I suppose when I think analytically there is some sort of processing going on.
I used the scientific method to make a theory and test it about cooking
My science lab for MIC 230. We had to develop tests for specimens and figure out what they were.
I've felt like a scientist in many of my science labs from high school til present: bio, chem, phy
Looking in a scope at the stars.

4. What skill or skills used by astronomers do you think might be useful to you in your life outside this class? Try to think of and briefly describe at least one, even if the connection is very general.

knowing star formations and how to find them
Observing is a very important skill astronomers use and is very important in our lives as well.
Attention to detail and observation will allow the person to notice minutes details that others wouldn't notice
They will be able to tell which each star is and it would help with telling the direction in which people are going.
Use of sight and along with that math and imagination. Everything studied is so far away, the only way to study it is from the planet. Ideas and universal laws help a lot.

Being able to understand huge distances.
The ability to identify patterns.
Curiosity, desire to learn, risk-taking/experimentations
I may have a better understanding of the origins of the universe and planet I live in.
Being able to identify constellations
Being able to identify stars and constellations and determining location from them
How to use a telescope
I think the skill of observation is useful in life. Looking at maticulus things in the life and observing smaller things.
If anything it will help you think about things on a broader spectrum, after learning about something as vast and infinite as the universe.
I think being able to describe astronomical phenomena would be fun even if not particularly useful
The scientific method is general is something astronomers use. I can use the scientific method in other science classes or classes that involve problem solving.
It would be useful to know how to properly use a telescope and be able to recognize constellations
I think that knowing more about the universe we live in is very important. Gaining more knowledge about human life and existence is important too
Just to better understand our universe.
Being smart
I think it is important to be able to piece everything together. To understand how things change and what relations things have, even outside of the sky and in more limited ways
I would say locating formations, people always wonder what formation you can find.
Outside of being interesting, I think knowing where the North Star is might come in handy.
Knowledge og the elements, good observer as well.
A careful eye and patience. Both seem to be important for life.
Curiosity and the ability to be creative in satisfying that curiosity to gain greater knowledge of what interests you could be used anywhere for any reason.
I don't know why, I've walways wanted to know how to identify constellations. It's not useful except for being able to find the North Star if I'm lost.
You can find a location on earth by looking at the moon. I think that's pretty tight.
Orientation, finding stars to navigate
Skills used by astronomers that might be useful in my life and being able to determine whats good and whats harmful to our universe. What stars are made up of and what's the purpose or meaning of them.
To determine how all old planet/solar system/universe is
If you are lost, sometimes you can find your way back by using the stars
Careful observation and interpretation of data would be very important
Astronomers need patience in many aspects of their work, and patience is very useful in everyday life.
I can't think of any type if skills that astronomers use in order to connect them into my life.
Knowing the many certain star patterns
The knowledge that we gain from the moon
Astronomers determine how much light we are going to have in a day, which effects my life.
Being able to name the constellations
To be honest, aside personal gratification and the joy or learning about the subject, I'm not sure how astronomy will be useful - besides able to teach others about it.
Knowledge of correlation between patterns in the sky and life on earth. Understanding of our physical existence.
Trying ti solve problems, looking at something so vast to get small answers.
I think being able to predict and think logically and analyse problems and situations would be useful skills to have.
The huge calculations and physical properties involved in the study of astronomy.
Thinking outside the box.

Math, computer skills
Problem solving, estimating
North star- If I'm lost
scientific method
Ability to conclude a hypothesis about something that can't be or is hard to prove
Astronomers have a good perspective on things and they must be good at math.
The scientific method is useful in a lot of places
I like finding math and science realted applications for sny everyday situation I can.
The knowledge of the placement of stars and planets and general knowledge of stars would help me as a counselor at Bible Camp when we camp outside
The ability to cut out harmful rays from the sun will help people to see more clearly
I'd like to be able to recognize some stars and formations. In general, I'd like to keep acquiring interesting information throughout my life
I think astronomers have to be able to be patient which would help e outside of this class.
To put little happening in my life into perspective.
What up above does to us every day!

5. What do you think about when you look at the night sky?

space, future, the unknown
I think about how far away stars and galaxies are and what could be happening there.
What is out there?
"That's a lot of stars" or when I'm in Chicago "Where are the stars?"
I think of the universe, and how large it really is. Trying to think about all that is out there and all the mysteries.
If the star I am looking at is still alive or if it has dead for many years now.
I think about how strange it is that not many people know much about outer space. I think about the small % of people that have the opportunity to go to outer space.
God.
Life, death, and how everything came to be
About how there are so many stars and planets that there has to be other life out there besides just us.
How it must have looked or felt like to look up at the sky 200 years ago.
How big the galaxy is, how old the stars might be, and I how I wish I knew more constellations than I do
I think about how beautiful it is and how wonderful of a God we have that he would bless us w/ such a beautiful sight. I fel at peace when I look at the night sky.
At first, I look for recognizable constellations then I start thinking about how small I really am, and how thinking we are the only life possible in the universe is arrogant and highly imporbable.
How large space is.
I think about how crazy it is that there are so many other objects out there other than what we see here on earth.
I normally start thinking about issues in my life and very deep things. Also, I think of God and how amazing, glorious & loving He is.
I think about the distances of the stars from Earth
I think about how far away the stars are & the infinite space
What is really out there
Constellations, and how big everything is/ how small we are
I feel very much alive and infinite when I see the night sky. I'm more awake, appreciative, understanding and content. I drive or walk a lot late at night and that's all that ever really calms me from whatever I worry about.
I wonder sometimes if there is a god and how this vast universe in which we live in was created.
I try to imagine how big the universe is how it was created and how small I am in the scheme of things.
There is so much more out there an we are smaller then a grain of sand on this huge universe.

That there are more planets and solar systems out there.
Giant balls of plasma unreachable distances away from us as of now. I think it's interesting and pleasant to view. I think about other planets maybe like ours with other life forms orbiting and of infinite amounts of stars. I wonder how far the universe actually goes and I questions whether it is infinite or if there are universe bubbles colliding and forming sister universes.
How far away the stars and galaxies.
How far away are these stars? And is there life out there? How many stars that I se have already burnt out.
I am always in awe.
I think of the fact even though the stars aren't always visible they're there. I also think about how small and insignificant a single person is.
How minimal and small the Earth is, and how much we have yet to discover
I think of life and how everything was once created. I believe we as humans will never fully understand our universe, how it was created, at how it works because there is just too much for us to ever comprehend.
The distance to the stars and try to group the concept of how large everything is
That someone I miss could be looking up at the same sky. I also think about how they are so far away
stars
Vast unexplored space; possibilities to learn
I am always struck by the vastness of the universe
I wonder about how the stars and planets all came to be and how we got to be where we are.
Peaceful things and the future. It makes me think og things a long way away
How incredibly small we are compared to the universe
Fascinating
I think about life on other worlds.
A lot of stars
How small we are, and how beautiful and full of mystery life is.
An infinite eternal realm of boundless and limitless possibilities
What else is out there and how far away the stars are.
I think about how the sky the changes and how the earth and other objects in the sky are moving.
Are we really alone
Mystery.
Orion's belt
I just reflect on my life and think about the things to come. I also imagine other people around the world.
Whether or not there is another planet like Earth.
What is really going on to create and hold everything together.
Which ones are planets or stars
How far away stars and how big the universe actually is.
I think about all the things that we don't know and things that could exist. I think about the beauty of stars, and the mystery of it.
Whether the stars I see are "the sun" of another galaxy, and whether life out there thinks the same of our sun.
How amazing it is. How was it composed? What is it composed of? How far does it go? How much do we humans know about it?
Nothing really. I just look
In Lion King, when Simba is talking to Mufasa who's in the sky. I'm a "leo" too, so I feel an intense connection
Space... endless questions.
A magical world we live in and unknown world above.

Astronomy Background:

23. How well could you see the night sky as a kid?

good
Good
Very Well
Not too well I live in Chicago.
Very Well
Very well
Very well
Very Well
Not well, lived in the city
Not well, I lives in the twin cities so there is a lot of light pollution.
Very Well, I lived in the country
Ok, area was decently lit
Well
Relatively Well
Fairly well
Very well, lived in the country
Not too well, but when camping very clear
Fairly Well
Well
No great, but some stars
Excellent
Very Well
Ok I guess
Very Well
Okay depending on where I was
Very Well
Fairly Well
I don't remember
Well
Great
I'm from Milwaukee, not that great.
Somewhat well
Very Well
No telescope, but was away from most city

lights
Pretty good, I knew what I was looking at
Very Well
Well
Not too well
Quite Well from home, very well when we we took the telescope somewhere
Not very well in Milwaukee
don't know
Good
Clearly
Well
Fairly Well
Fairly Well
Very Well
Pretty well
I lived on a farm in eastern europe. No light pollution, so very well.
Good
average
Very Well
Decent
Well
Fairly well
Very Well
Very well
Not very well, just the stars, never planets
Very well
Very very well
Very well, lived in the country
Pretty Well
Well

24. How many constellations can you identify in the night sky? [You do not need to name them]

7
A few
5 to 10
4
5
5 to 10
2
3
0
4
3

3
3
5
3
4
3
3
3
1
3
3 to 6
5

2 or 3
2
few
4
3
3
4
a few
0
4
3

4 to 5
4
4
4
6
5
1
4
2
4 to 6
2

3
6
4
3
a few
enough
2
4 to 5
3 to 4
4 to 5
6

0
3
0
5
4
3
2 to 3
5 to 9