hi I'm Debbie Rivera and I'm manager of the NASA Lego partnerships and I want to welcome you all to the Google+ hangout. We're here today to talk about our NASA Lego competition it's called NASA's missions imagine and build. This event is an opportunity to discuss them cut the competition and to find out how you can enter a futuristic design of your own. The competition is currently open and it will end on July thirty-first and that means there's only 15 more days so we're going to be taking some real-time questions using the hashtag.
ask Lego on twitter or from the NASA google page during the event we also have opened up a thread on NASA's Facebook page where you can post questions so now I'd like to introduce the team Leland good morning my name is Leland Melvin I'm the associate administrator for education and I'm very excited to be here and I'm a former astronaut too so let's build a future in a very grand way hi I'm April Anna and I'm an Einstein educational fellow working at NASA headquarters with the aeronautics research mission directorate
so i'll be answering your questions today that have to do with any of your aeronautics questions and how about our LEGO Friends I'll go first um my name is Sarah Moore I'm an online community specialist at the lego group I work on a platform called rebirth com mom where the contest is being hosted it's a community site for a teen adult fans of Lego bricks and Freddie hi my name is Claude Regan which is very hard to pronounce so I don't feel free to call me Freddy I work with sarah at the lego group i'm a community editor and working
at reaping great so that's our team and

44
00:01:58,349 --> 00:02:02,879
we do have a lot of questions so we're

45
00:02:00,390 --> 00:02:05,489
going to get going right away let me

46
00:02:02,879 --> 00:02:08,939
take the first question I want to take

47
00:02:05,489 --> 00:02:12,919
part but I don't really own any Lego

48
00:02:08,939 --> 00:02:15,079
bricks how can i participate uh Freddie

49
00:02:12,919 --> 00:02:19,609
are Sam I mean prettier Sarah would you

50
00:02:15,080 --> 00:02:21,410
like to take that question sure it's

51
00:02:19,610 --> 00:02:24,319
fine if you don't any air own any Lego

52
00:02:21,409 --> 00:02:27,919
bricks because are inventing the future

53
00:02:24,318 --> 00:02:29,568
flight competition actually invites you

54
00:02:27,919 --> 00:02:32,109
to use lego Digital Designer which is

55
00:02:29,568 --> 00:02:34,519
free software provided by the LEGO Group

56
00:02:32,110 --> 00:02:36,830
which you can design the accompanying

57
00:02:34,520 --> 00:02:39,439
prototype to go with your research paper
and a link to this program is actually on the rules page on Reba calm and I think you can get to it on Lego duck as well okay thank you very much now we're going to go to one of the questions we came that came to us from the Google+ line and it's from crystal the question is would it only be design models or should the spacecraft have the ability to launch and I believe that is a great question but we're really looking at the design models would anybody else like to care to answer that April sure I'll take a stab at that so all these design
models are just prototypes and so it's basically what it looks like it doesn't have to fly or launch so all you need to do is build your prototype and it can sit on a Lego base plate or not I'll show you here we have one of our NASA models and this is right here is just a prototype so it doesn't fly it doesn't function but it has all the components on it that it would if it was a real working model so no it doesn't have to be a moat working model great question thanks okay crystal we want to see those designs okay by the 31st 15
More days if you've just joined us we are talking about the NASA Lego partnership called NASA's missions imagine and build we're here to talk about the competition and we have 15 days left in the competition to get your designs in I have with me today Leland Melvin and April Lynott and from the lego group we have Freddie and Sara so thank you very much for people to bring in their questions and here's another one can we use stickers on the model if there are official Lego stickers Sarah are Freddy would you like to answer that
question yes you can absolutely use

stickers the only exception is a bets

stickers that you use either the NASA of

the Lego logo unfortunately we cannot

use any models using these logos as I

would imply that we're endorsing that

entry but other stickers are absolutely

all right great thank you very much we

have another question and this one I

think Leland you should be able to

answer this one okay he says I am 12

years old and I can't enter the

competition because you know this

competition is for 13 years old plus

will there be other NASA or Lego contest
coming up well there are some really

cool contest going on right now there's

one call the exploration design

challenge it's for a kindergarten

through 12th grade if you go to nasa.gov

slash education you can see this design

challenge it's where we have students

building radiation shields to actually

fly on the Orion vehicle so it's really

cool check it out you'll learn about

radiation how you can protect yourselves

how astronauts can protect themselves

going to Mars one day and so it's a

really cool competition there are other
things that are out there that you can do just go to nasa.gov such education you'll see some of the cool things we do at NASA education awesome and thanks so much for that Leland also we had do have a follow-up question for Leland and that one is will you be one of the competition judges well yes I will myself and another NASA colleague and two designers will be judging all of the contestants so get your design in 15 days left and we want to see some really cool way out there exotic futuristic stuff because these designs may one day
be what our designers and engineers here use

NASA to build a I'm gonna build the next vehicle that's going to Mars so be very creative be very open and some of these futuristic airplanes at april's showing you right here you know those are designs if we want to see your your best work so looking forward to that you know

it's speaking of April and the Aeronautics missions one another

question that we have had is this inventing the future of flight competition requires a technical paper

157
00:07:09,009 --> 00:07:14,529
April can you tell us what is involved

00:07:11,740 --> 00:07:16,960
in that technical paper sure I'd love to

00:07:14,529 --> 00:07:18,759
so the technical paper don't let

00:07:16,959 --> 00:07:21,189
yourselves be scared off by the term

00:07:18,759 --> 00:07:22,599
technical paper so what we want to know

00:07:21,189 --> 00:07:24,100
is we want to know more about your

00:07:22,600 --> 00:07:26,650
designs so you have all these great

00:07:24,100 --> 00:07:28,090
ideas and all these great designs but

00:07:26,649 --> 00:07:29,620
you need to be able to show it off and

00:07:28,089 --> 00:07:31,388
so what we need is we need a paper that

00:07:29,620 --> 00:07:34,389
goes along with it and the paper

00:07:31,389 --> 00:07:36,970
explains what your prototype is explains

00:07:34,389 --> 00:07:38,650
your design and it also explains why it

00:07:36,970 --> 00:07:40,510
would fit well with what we're working

00:07:38,649 --> 00:07:43,239
on right now so if you take your
technical paper if you just add your
details of your design and
that'll be great if you go to the the
Reeb Rick site it'll tell you all the
details for the paper it takes you
through step by step so you don't
have to worry about starting from
scratch it'll tell you exactly what we
want but we basically want an
explanation of your aircraft and why
it's so great awesome so don't be afraid
but did I tell you you only have 15 more
days okay so moving on we have a
question from Twitter Courtney has asked
this particular question and it's a really good one it's talking about what exactly is the goal of the competition and I'm going to answer the one like how how what the goal is for NASA and for Lego but then I think there's also another aspect of that question is and that is what is the goal of the competition for the folks that are actually entering your designs so let's start with the first one the first one is what is NASA and leg why is NASA and Lego doing this competition we came in too many years ago a really terrific
partnership NASA and Lego because we had mutual things that we wanted to do and one of it was how can we get information about our products and missions out in a innovative way that would capture the interest and engagement of the public. well one of the things that we're doing is this competition through you taking a look at what NASA is doing in their missions and we we have just a lot of missions to talk about but with this focused competition we can we can see what you guys can find out about NASA you can go to nasa.gov find out all
about our missions and that helps us get

00:09:44,990 --> 00:09:52,070
our story out to you okay so that is one

00:09:48,889 --> 00:09:55,429
of the major goals for NASA and I think

00:09:52,070 --> 00:09:58,129
Lego also has some so when they're able

00:09:55,429 --> 00:10:00,948
they can they can give you their goals

00:09:58,129 --> 00:10:03,649
of the competition so before we go to

00:10:00,948 --> 00:10:06,649
that second part of what what are the

00:10:03,649 --> 00:10:10,159
goals Courtney I'd like to see if

00:10:06,649 --> 00:10:12,350
Freddie might be able to give us an

00:10:10,159 --> 00:10:16,069
answer of what the Lego goals are for

00:10:12,350 --> 00:10:19,159
the competition Freddie well some of the

00:10:16,070 --> 00:10:24,079
goals first for most of our LEGO fans

00:10:19,159 --> 00:10:27,049
are also great fans of space and they

00:10:24,078 --> 00:10:28,909
are not affixed and NASA so that's you

00:10:27,049 --> 00:10:30,919
know filet go it's a great opportunity
and for the fans it's an amazing opportunity to do to combine those two interests and I think that's what really is peaking an interest for four leg of the lego group but also for the LEGO fans and obviously for the lego fan it's you know there's nothing cool than to say that that you've won something with NASA so I think that in itself is it's a pretty awesome goal and I just think another another really cool goal of this this partnership is that we're getting people that maybe never have thought of themselves as
being scientists and engineers and they're building something developing something creating something that may one day end up as the model of you know the vehicle going to Mars and so I think we're sharing with lego fan base you know the principles of design and building of these futuristic vehicles in these futuristic satellites and robots whatever we build but we have a whole new group of people that are now learning more about NASA and how we can save our planet from an asteroid one day or how we can save you get astronauts to
to Mars safely so I think that's another big goal is to let this whole base of people in our own in the world because everyone knows what Legos are you know to to know about what we're doing at NASA and it can help everyone you're absolutely radiation to space everything exactly and I think it goes both ways because for a lot of people who work with Lego and it breaks on it on a general basis they might not think that there are engineers and have the capability of building and on the other hand people who are used to to
engineering and building may not think

00:12:17,830 --> 00:12:26,730
of the LEGO brick as as a tool to build

00:12:20,589 --> 00:12:31,570
so it's really a fun combination awesome

00:12:26,730 --> 00:12:34,180
we have another question from google

00:12:31,570 --> 00:12:36,879
plus and that's forgive me if I

00:12:34,179 --> 00:12:42,069
mispronounce your name they're rich off

00:12:36,879 --> 00:12:44,649
and they would like to know can an adult

00:12:42,070 --> 00:12:47,079
participate in this event with a team

00:12:44,649 --> 00:12:49,778
and April would you like to take that

00:12:47,078 --> 00:12:52,120
question absolutely so the answer is yes

00:12:49,778 --> 00:12:54,519
you can definitely join as a team and we

00:12:52,120 --> 00:12:57,039
would love to see exactly that kind of

00:12:54,519 --> 00:12:59,379
that kind of team going so we have two

00:12:57,039 --> 00:13:01,120
categories if you're working on the on

00:12:59,379 --> 00:13:03,250
the inventing the future of flight
there's a young builders category that's

for ages 13 through 18 and if you're

that age you're automatically entered

into that category however you're not

limited you're also a part of the larger

category if you enter with an adult all

it

does doesn't qualify you for the young

builders category because you have two

people in the contest but definitely

enter and that would be a great

partnership you probably come up with

some great ideas that one if you entered

by yourself wouldn't come up with so
please do great great thanks so much

okay looking for the next question and

while we're talking about things to

think about for designing and entering

into the competition there is a question

for April and that is I have a great

idea for an unmanned aircraft design

does the aircraft need to have a pilot

that's another great question then no

you don't have to have a pilot aircraft

of the future are going to be flying in

all kinds of ways some that we know

about and some that we don't even know

about unmanned aircraft are really
starting to become more and more prominent and more designs are going on with that so note your airplane does not have to have a pilot we want to see exactly what you can come up with like we said it's the future of flight so that can be pretty much anything you can imagine though the sky's the limit terrific great the sky is the limit right sorry yeah I guess it is the moon what is the limit Leland I don't know the limit is on the moon right that's this guy movement yeah that's right okay cool all right let's see in case you
have just joined us we are here at a

Google+ Hangout we're talking about the

NASA Lego partnership competition called

NASA's missions imagine and build I'm

Debbie Rivera and I head up the NASA

legal partnership and with me today is

Leland Melvin as well as April anat and

we have two folks from Lego Freddie Hoff

and Theramore so what we're doing is we

are getting your questions off of

twitter with the hashtag of ask Lego and

all

so we have the Google+ where you can

post your questions and a thread off of

NASA's Facebook page so with that we're
going to start answering some more

questions um the quick question hey

right here from the studio will have

Leland Melvin with a question how big a

team and we have is it limited to

croatian we have a limit of up to five

people on a team property right so if

you have more than that just feel free

to split into separate teams and get

busy with your with your designs ok

remember and exactly and that's a great

question because then what I'd like to

do because some people may be new to the

Google+ Hangout Freddy maybe you want to
Freddie or Sarah maybe you want to just restate that there's two parts of the competition and what those two competitions are so um the overall competition has two parts one is the inventing our future of light competition now this is a sort of the academic part of it which is where you write an academic paper and at the Santa mayor to build a model to go with that paper the other of your competition is our and imagine our culture beyond Earth competitions fair enough sir which is more of a free build competition which
is where you build whatever your imagine

hold from one of the future NASA missions until 2030 I think so they're

they're both very exciting very different and what you can do to read up on them is to go to new rebirth calm and

there's a big banner right on the front page and you click on that and I'll take you to the rules for both of our competitions

great thanks a lot Freddie in fact here's one from some of our friends in Huntsville Alabama this is coming in from Google+ as many of you know we have
a NASA field center down there and

00:17:52,299 --> 00:18:00,889
Wesley says I live in huntsville where

00:17:55,670 --> 00:18:03,650
NASA is huge how can I engage Lego to do

00:18:00,890 --> 00:18:05,090
something like this for younger kids so

00:18:03,650 --> 00:18:12,200
I think this is a very appropriate

00:18:05,089 --> 00:18:15,409
question for our friend Freddie um I am

00:18:12,200 --> 00:18:17,299
pretty sure that that the lego group

00:18:15,410 --> 00:18:21,350
would be interested in doing something

00:18:17,299 --> 00:18:24,950
for younger kids as well I think the

00:18:21,349 --> 00:18:29,869
best thing to do is to to you know get a

00:18:24,950 --> 00:18:32,360
hold of both Lego the LEGO Group and

00:18:29,869 --> 00:18:34,459
massive write an email come with the

00:18:32,359 --> 00:18:38,179
suggestion of what you think would be a

00:18:34,460 --> 00:18:39,350
cool idea I certainly know that we've

00:18:38,180 --> 00:18:41,539
been really excited about this
collaboration so I don't see why there 

will be a possibility of another 

collaboration in the future and I think 

definitely if you're a younger kid in 

your you know your 13 our younger it 

will 12 were younger you know create 

something build something and then post 

your design out there for the world to 

see and there may be other people 

besides Lego even NASA that may like 

your design and want to bring you on to 

start a new competition so don't just 

limit yourself you know use your own 

mind to be creative and build developed
create and someone may say that's one of

the most innovative things that I've

seen and take that so don't don't limit

yourself you can do anything you put

your mind to wonderful wonderful okay we

have another question from our Google+

group and this is from Jorge and this is

to April our children are from Mexico

can they participate in this competition

definitely as long as you are 13 and

over then you're open to participate

from anywhere around the world teammates

can be right there with each other or

you can even collaborate across
continents if you have other teammates in other countries that want to participate everybody is free to participate now with the design software can you collaborate across you know from different different computers yes so you can so when you use the lego Digital Designer if that's what you're using you go in you create your prototype you create you design your build and you save it just like a regular file everyone would have to have the same software on their computer but you can
send it to each other work on it send it

back it would be a great way to

collaborate and that's how we

collaborate here at NASA we work with

build the International Space Station

and sometimes these parts have never

come together on the ground but they

come together in space and so that's how

we do designs and with the with the

first competition for aviation you're

right in this technical paper this paper

helps you with design you know if you

were working with someone else how could

this other person start ability or
design so that paper can help exact that

and that's the whole point of the competition is to make it as realistic

NASA collaborates with each other we have ten different centers

across the country and then like you said we're a cooperating internationally as well and so we want this to be you know based on real-life scenarios so when it comes to the aviation contest we're designing it after a program that we call n plus 3 and what that is is taking NASA's next generation not this the next generation but the generation
after that and the third generation

after that and looking at what aircraft

will look like 10 20 30 years in the

future and right now university and

commercial teams are working on these

designs like you see right here these

are done by college students and and

commercial partners working together

again remotely they don't always see

each other they're working on teams

spread out all over the place and so the

idea and the reason we have the

technical paper is so that it matches

just what those people are doing so we
want to see what everybody else can build just because a university students building it doesn't mean that you can't come up with a design that might be something completely unique and something that someone else may never have thought of before so we want to see what you can do to recycle yeah great I just want to interject here this is Sarah again um wet go back to the question about countries that can participate it's fine Mexico is fine for participation but we do have a few areas
that are you know we just can't do to

00:22:16,069 --> 00:22:21,799
the air the own country's rules have

00:22:18,980 --> 00:22:24,769
participation you know places like Cuba

00:22:21,799 --> 00:22:27,200
North Korea that those kinds of

00:22:24,769 --> 00:22:30,259
locations it's all listed in our rules

00:22:27,200 --> 00:22:33,170
on rebirth calm so if you're concerned

00:22:30,259 --> 00:22:37,309
about your country of origin please

00:22:33,170 --> 00:22:41,000
check out rubric calm great point thanks

00:22:37,309 --> 00:22:43,669
Sarah yeah thanks very much as a matter

00:22:41,000 --> 00:22:46,549
of fact while we are talking to our lego

00:22:43,670 --> 00:22:48,830
fan folks over there and whether it's in

00:22:46,549 --> 00:22:52,069
Connecticut or Denmark today Sarah or

00:22:48,829 --> 00:22:54,669
Freddie I would like to give you a

00:22:52,069 --> 00:23:00,139
question from Courtney over Twitter and

00:22:54,670 --> 00:23:03,080
that is how would you pick a winner hey
I'll take that the winners are picked by a panel of judges depending on the competition for our inventing the future of flight competition Leland be one of the judges there I think he'll be a judge both for the competition's I believe actually so it's really making him happy that you have to cater to but we also will have we also have another engineer from NASA i believe and lego specialists as well for that competition and then and in the other competition the free build imagines the future beyond earth that will have to lego
designers as the judge along with roland

so they will pick the best bottle and

just to add the add to that in the rules

and what have you Sarah is there some

more information about what folks are

looking for yes absolutely they will be

judged on a couple of criteria which can

be found on the rules or I'll just pull

that up real quickly right now so for

the further imagine the future beyond

Earth the winning model will be judged

based on over overall coolness and

creativity inspired originality

and the imagine a future beyond Earth
theme and for the other set of rules I
have it all hard copies so i have to
arrival through a little bit say
research paper academic one will be
judged on a quite an extensive list of
criteria which you can find on the rules
page they're based on the you know the
physical model and the research paper as
well that's very helpful thanks Sarah
and again like she said just go to
rebury calm and you can get all the
information so for those of you who have
just joined us on our Google+ Hangout
Debbie Rivera I'm head of NASA's and

NASA Lego partnerships and we're here to

discuss the latest competition and that

is called NASA's missions imagine and

built the competition is open but it

does close on July thirty-first so we're

using the google plus to talk about the

competition and with me today is leland

melvin head of the education office here

at NASA and former two-time Shuttle

astronaut and then we have April the

Nazis are Einstein fellow that works in

the aeronautics research mission

directorate our Lego folks one of which

is Sarah Moore and Connecticut and the

other one is Freddie Hoff and she is
coming to us from Denmark so thanks

everybody for joining us and I think

we're looking for our next question if

you can just wait one moment toe as my

my lovely assistant is writing it down

on a piece of paper you're smiling

lovely assistant right otherwise known

as Cindy still giver kudos well she is

embarrassed off but she's still writing

so hold on just a moment in Sarum

mentioned the coolness factor you know

as we're judging these these different

models you know how cool an imaginative

you can be when you design these and
functional too so looking forward to

seeing them we don't want a model of

something that already exists we want

something that you can think up that is

totally different than anything we've

thought of before excellent okay so we

have a question from Twitter and it's

from car poor and here's the question

what is the best way to approach NASA

with ideas for public relations haha

well think you're the best person for

that haha thank you so much sugar the

best way to connect with NASA on any of

your ideas is probably through the
public you know you can write to NASA

can write to Charlie Bolden or you can write to David Weaver who's the head of the office of communications and give us your ideas through that way there may be something on wasa.gov that can provide input but I would suggest for public relations why don't you connect with David Weaver at NASA headquarters office of communications and my lovely assistant in my ear is telling me another way for you all to give us some input and that is through email and what was that lovely assistants what lovely
assistant what was that email thing

614  00:28:14,750 --> 00:28:17,200
again

615  00:28:19,148 --> 00:28:27,998
public dash inquiries at nasa.gov so

616  00:28:24,878 --> 00:28:38,519
that's wait wait wait wait wait stand by

617  00:28:27,999 --> 00:28:43,450
public thought inquiries rewind okay

618  00:28:38,519 --> 00:28:49,118
help me people public dot dash public

619  00:28:43,450 --> 00:28:53,219
dash head coach inquiries at all right

620  00:28:49,118 --> 00:29:01,269
one more time with gusto public dash

621  00:28:53,219 --> 00:29:05,349
inquiries at HQ dot nasa.gov see how

622  00:29:01,269 --> 00:29:11,909
well this works okay um terrific well

623  00:29:05,348 --> 00:29:15,398
let's see there is another question here

624  00:29:11,909 --> 00:29:18,129
have we really talked about the prizes

625  00:29:15,398 --> 00:29:21,908
that are going to be happening for the

626  00:29:18,128 --> 00:29:23,769
people who are winners um I think we

627  00:29:21,909 --> 00:29:26,259
should you know because come on it is a
competition crisis a winner should be able to get something for their efforts Freddie or Sarah do you want to talk about that or otherwise will we will well you know aside from the obvious price of winning these awesome competitions we do have some physical prices as well and they're there they're pretty cool for the inventing our future flight competition the prize winner world will get a Lego trophy which is really really cool um a collection of memorable NASA memorabilia and and a virtual presentation of the
project NASA and Lego specialists so

that's you know pretty awesome prize i

think and for our imagine our future

beyond Earth for that competition Sarah

do you want to

take that one sure I'll handle that I

just had to meet unmute my microphone um

this for this competition we are

actually giving away a signed Lego kusa

hayabusa set which is a satellite that

was launched into space in collaboration

with NASA and a Japanese agency and it's

a lego model of the satellite we're not

giving you the actual satellite um and
we're also giving away the upcoming Mars rover lego cuusoo said so this is a brand-new just in a mount set once it's available in early 2014 that was submitted by a fan and it looks just like the rover on Mars right now and it's a it's a very very cool item very rare and exclusive and along with that we're also getting a collection of NASA memorabilia to go along with those lego prizes and let me tell you that memorabilia is i'll even i think i'll even throw in my last mission i'll throw in a couple of mission patches flown
mission patches to for the winners how's

00:31:42,529 --> 00:31:48,408
that now eat breaking news they only

00:31:45,859 --> 00:31:51,439
have four point nine million miles on

00:31:48,409 --> 00:31:52,730
them so it's not that far but yeah we're

00:31:51,440 --> 00:31:54,919
going to throw that into you well that's

00:31:52,730 --> 00:31:57,558
awesome that is very generous of you

00:31:54,919 --> 00:32:00,919
Leland awesome very cool breaking news

00:31:57,558 --> 00:32:03,859
breaking news here at the NASA google+

00:32:00,919 --> 00:32:07,330
hangout for those of you who have joined

00:32:03,859 --> 00:32:11,089
us we're a little bit beyond midway

00:32:07,329 --> 00:32:14,149
Debbie Rivera and I'm the lead for the

00:32:11,089 --> 00:32:16,639
NASA Lego partnerships and we're here to

00:32:14,150 --> 00:32:19,610
talk about the NASA Lego competition

00:32:16,640 --> 00:32:22,549
it's called NASA's missions imagine and

00:32:19,609 --> 00:32:27,529
built and it's currently open and
00:32:22,548 --> 00:32:29,658
running through July thirty-first we are

00:32:27,529 --> 00:32:32,658
here today to talk about the competition

00:32:29,659 --> 00:32:35,900
you can also check it out on re bral a

00:32:32,659 --> 00:32:38,960
go com but let me introduce you to the

00:32:35,900 --> 00:32:41,450
folks here the team we have Leland

00:32:38,960 --> 00:32:43,860
Melvin who's ahead of the Office of

00:32:41,450 --> 00:32:48,029
Education and former shuttle

00:32:43,859 --> 00:32:51,178
astronaut ccc and then we have April a

00:32:48,029 --> 00:32:55,109
dot who is the education Einstein fellow

00:32:51,179 --> 00:32:57,420
here and she works in the Aeronautics

00:32:55,109 --> 00:33:01,289
Mission Directorate and then we have

00:32:57,420 --> 00:33:04,769
some folks over in Legoland just kidding

00:33:01,289 --> 00:33:07,740
it's Lego the lego group Sarah Moore we

00:33:04,769 --> 00:33:10,829
have in Connecticut and we also have
Freddy Hoff who is coming to us from Denmark so welcome everybody who's just joining us one of the things that is I mentioned there is a NASA Lego partnership and the competition is one of the things that we have done but something else that we have done and you can still engage with it and that is we end Lego put Lego bricks up on the International Space Station and up there the astronauts were able to show folks physics concepts and how things work in space versus on the ground and there's lots of cool video on it and you can
take a look at that at lego space com

that's lego space calm and uh but we

have somebody here who could actually

talk to us about what the space station

is all about and why it's important

Leland right so I flew on the space

station in 2008-2009 and had the most

incredible time we installed the the

Columbus laboratory the European Space

Agency's big laboratory to do materials

processing research to do human research

you know physics on how the blood goes

through your body you're hearing your

vision all these different things so we


go to Mars one day we can use that that

go to Mars one day we can use that that
728
00:34:32,519 --> 00:34:36,989
platform as a testbed to figure out how

729
00:34:35,039 --> 00:34:39,809
people will live on mars for up to a

730
00:34:36,989 --> 00:34:41,579
year and a half or so and so up on Space

731
00:34:39,809 --> 00:34:44,849
Station right now we have astronauts I

732
00:34:41,579 --> 00:34:48,480
think I posted a video on on Twitter

733
00:34:44,849 --> 00:34:50,128
this morning of Karen Nyberg washing her

734
00:34:48,480 --> 00:34:51,570
hair you know how do you wash your hair

735
00:34:50,128 --> 00:34:53,668
now I didn't have that problem in space

736
00:34:51,570 --> 00:34:55,980
because I you know have a low cut here

737
00:34:53,668 --> 00:34:57,629
but how do you do these things these

738
00:34:55,980 --> 00:34:59,519
biological things in space

739
00:34:57,630 --> 00:35:00,778
and this this test bed is going to be

740
00:35:00,778 --> 00:35:04,739
the platform that helps us get to other

741
00:35:00,778 --> 00:35:07,469
planets one day so Kevin Ford was one of
my astronaut buddies took a mindstorms
robotics kit and created a gyro in space
and that gyro is similar to the control
moment gyros there four of them that are
spinning that allow the station to be in
a particular attitude orientation to
pitch yaw and roll as it's going around
the planet at 17,500 miles per hour
every 90 minutes and so this is one of
the things that we can see how these
Lego bricks work in space but how they
would then work under a gravitational
field on the planet and so we have
education guides for for teachers for
students to work with you can compare the difference so that as you're building your vehicle's your future vehicles you have to think about how with this vehicle work in a zero-g environment and so those are some of the things that we use space station forward to help us trick out how we would build vehicles build you know hardware and also have people working on living on this platform and for future platforms awesome and like i said the video of kevin doing that is on lego space com so you can see him working with that Lego
gyro it's really cool okay good ass so

check that out okay great I'm going to

go back to some questions we have one

from facebook and this is probably a

good one for our Lego team and the

question is how many entries have you

received so far so far we've only

received a handful of entries but we're

hopeful that there will be much more by

the end of the month so that also means

if you're looking to enter competitions

kind of low right now so come one come

all that's what she's saying okay and

and remember it does take a little bit
of time to put these together so we're

00:36:58,889 --> 00:37:05,518
really anticipating a lot to come in in

00:37:02,400 --> 00:37:09,059
the next 15 days so make sure your entry

00:37:05,518 --> 00:37:11,459
is one of them okay so now she was going

00:37:09,059 --> 00:37:15,360
I just want to oh go ahead

00:37:11,460 --> 00:37:18,570
I just wanted to add that the movie we

00:37:15,360 --> 00:37:21,000
have had to disqualify certain entries

00:37:18,570 --> 00:37:24,720
because they didn't follow the rules so

00:37:21,000 --> 00:37:27,150
make sure to to read the rules and you

00:37:24,719 --> 00:37:29,579
know so give yourself enough time for

00:37:27,150 --> 00:37:32,430
the entry so that you can fix if there

00:37:29,579 --> 00:37:36,779
is a there is an issue but you didn't

00:37:32,429 --> 00:37:38,159
fall the official looks ready I have a

00:37:36,780 --> 00:37:40,200
question for you if someone doesn't

00:37:38,159 --> 00:37:42,000
follow the rules will you notify them
799 00:37:40,199 --> 00:37:45,839
that there's a problem with their

800 00:37:42,000 --> 00:37:47,190
energies okay yes we will great so

801 00:37:45,840 --> 00:37:49,650
that's another reason to make sure you

802 00:37:47,190 --> 00:37:51,599
get it in on time and early so that they

803 00:37:49,650 --> 00:37:53,700
can catch those you know might be a

804 00:37:51,599 --> 00:37:56,309
small mistake but something that we just

805 00:37:53,699 --> 00:38:00,149
can't you know have with the contest so

806 00:37:56,309 --> 00:38:02,509
make sure you turn it in early okay time

807 00:38:00,150 --> 00:38:06,269
to get back to some more questions and

808 00:38:02,510 --> 00:38:09,300
the next one is a google plus from

809 00:38:06,269 --> 00:38:10,650
goole plus and that is from and forgive

810 00:38:09,300 --> 00:38:15,570
me if i'm pronouncing your name wrong

811 00:38:10,650 --> 00:38:17,369
bun pension and here's the question what

812 00:38:15,570 --> 00:38:22,830
do you want to see in this competition
and do we get free Lego parts I wish

okay um anybody would like to take that question I'll take the first part and so

what we want to see in the competition is we want to see ideas that are based on something that could possibly work in the future now like we said it doesn't have to be a working model but we do want to see that your entry fits in with what kinds of things are working on so for example if you if you check out what NASA is working on for Aeronautics and you can do that right off of the NASA site or you can also go to
aeronautics.nasa.gov what you'll find is

that what we're trying to do is we're trying to help airplanes fly safer we're helping that we want them to fly faster

we want less fuel emissions and but we need them all to be able to work together and be able to fly in the same airspace so we need them to we need them to function well with one another so when we talk about that we want to see that you have a great idea but you have a great idea that you think would fit with what kinds of things are actually in existence and could realistic
you know be placed into you know into

00:39:27,809 --> 00:39:32,489
our future Aeronautics and same with

00:39:30,269 --> 00:39:34,679
they with the space component as well

00:39:32,489 --> 00:39:37,229
there's a little more flexibility in the

00:39:34,679 --> 00:39:38,279
space competition because when you're

00:39:37,230 --> 00:39:40,800
sending it out there you're not

00:39:38,280 --> 00:39:43,230
necessarily coordinating with with other

00:39:40,800 --> 00:39:45,600
spacecraft once you get out past Earth's

00:39:43,230 --> 00:39:47,820
orbit you can pretty much go wherever

00:39:45,599 --> 00:39:49,110
you need to go but when we type but you

00:39:47,820 --> 00:39:51,120
may have a constellation of spacecraft

00:39:49,110 --> 00:39:53,130
going out to do a mission exactly and

00:39:51,119 --> 00:39:55,469
that's a possibility too yeah and as we

00:39:53,130 --> 00:39:57,990
go and looking at retrieving an asteroid

00:39:55,469 --> 00:40:00,149
how do we build a vehicle that uses
solar electric propulsion that's one of

the things that we're looking at doing

right now to to give us a repulsion

system that can get us out there grab

the asteroid bring it back to sis lunar

orbit so that we can send astronauts on

Orion up there to actually mine the

asteroid and think about how we can

protect our planet in case like on my

birthday februari 15th this past year

there was a meteorite that hit in Russia

that could have caused much more damage

than it did so we want to be able to

look out there and see if there's
something coming towards us that we can actually mitigate or move out into a different orbit so that it doesn't impact the planet and take out our civilization so those are some of the things that we're looking at doing at NASA to ensure that we are of a future and that's about building the future exactly imagining and building the future magic and Bill that's right this is what we're talking about it this competition aren't we but the second part of that question was about the free Lego bricks and before we have our Lego
folks answer that question there another question came in that has a little bit to do with that as well so I'm going to I'm going to throw that question out as to our Lego folks and it's through the google plus where can I go where can I go build the model for the competition online and that may be part of your answer Freddy or Sarah yeah so regarding free Lego bricks um we don't we aren't really giving those away unless you count the prizes for the competition which do include Lego bricks but if the concern is whether or not you don't
have bricks to build a model with we

899
00:41:42,239 --> 00:41:46,919
recommend entering the inventing the

900
00:41:45,059 --> 00:41:49,739
future flight competition since that

901
00:41:46,920 --> 00:41:52,590
competition is open for a digital model

902
00:41:49,739 --> 00:41:54,029
to be created and the software that you

903
00:41:52,590 --> 00:41:55,500
would use is completely free provided by

904
00:41:54,030 --> 00:41:58,740
the lego group called lego Digital

905
00:41:55,500 --> 00:42:00,869
Designer and to download that to build

906
00:41:58,739 --> 00:42:03,899
your prototype you can actually go to

907
00:42:00,869 --> 00:42:06,210
rieb er calm and click the banner and go

908
00:42:03,900 --> 00:42:07,860
through to the imagine inventing the

909
00:42:06,210 --> 00:42:09,990
future of flight competition you can

910
00:42:07,860 --> 00:42:11,460
also just try searching for it and that

911
00:42:09,989 --> 00:42:17,309
should take you to the direct download

912
00:42:11,460 --> 00:42:19,740
page on Lego com awesome yeah I'm from a
Mac user does it work on a mac also Mac

NPCs I believe so yes ok yes so I want
to fill my till tonight well speaking of

Microsoft and Mac believe it or not we
have a question from Abby gate ah well I

be gates um from google plus and here's
what be gates wants to know does it have
to be a plane or rocket or can it be a
lander or a satellite oh good question

April would you like to take that I sure
will so it can be pretty much anything

you can think of so the aircraft is

obviously something that would that
would fly in Earth's atmosphere but no
it doesn't have to be it can be a

satellite a lander of rocket you could

even build a lunar outpost or anything

that's going to take us out past Earth's

orbit so it doesn't have to be a

transportation device unless it's the

aircraft that's the only one that has to

be a you know a vehicle but in terms of

the space the space when it can be

anything you can imagine that belongs

out past Earth's orbit oh great question

thank you big eight we have we have

several more but I just want to make

sure that the folks who have just joined
us realize that we are talking about the NASA Lego competition called a NASA's missions imagine a build I'm Debbie Rivera head of the NASA Lego partnerships with me today is Leland Melvin head of our education here at NASA we have April would not and she's one of our education Einstein fellows who works in the Aeronautics area we also have our Lego folks and that is Sarah Moore she's here with us in the United States and Connecticut as well as Freddy Hoff from Denmark okay we have only about maybe 12 minutes left so
I want really want to get these

00:44:18,389 --> 00:44:25,109
questions questions in come on come on

00:44:20,909 --> 00:44:27,750
ok questions all right from google plus

00:44:25,110 --> 00:44:30,510
peter is asking can you elaborate on

00:44:27,750 --> 00:44:34,500
inspired originality what does that

00:44:30,510 --> 00:44:37,080
really mean sure I can do that one go

00:44:34,500 --> 00:44:38,369
April so so one of the things that we

00:44:37,079 --> 00:44:39,960
want to do is we want to see what you

00:44:38,369 --> 00:44:43,289
can come up with on your own however

00:44:39,960 --> 00:44:45,420
like I just said we want we want models

00:44:43,289 --> 00:44:47,460
that fit in with with what we're doing

00:44:45,420 --> 00:44:49,470
right now so for example if you take a

00:44:47,460 --> 00:44:52,019
look at what aeronautics is working on

00:44:49,469 --> 00:44:54,059
we're working on aircraft that fly

00:44:52,019 --> 00:44:57,780
perhaps faster than the speed of sound
we're looking at new model new shapes we have lots of composite structures and so we're able to come up with new designs but we want to know that your model that your design would fit into what's going on on what's really going on so when we talk about inspired what we really mean is more in a way almost informed creativity so we want to know that you have an idea of what's going on in the first place and how your design can fit in with what's already going on so we want you to be creative we don't want you to build what we've already built
but we want it to fit in with everything else we're doing and where you can get that information about what NASA's doing again is on www.nasa.gov okay we have another question what if you build your model how do you you send it in as a physical model or do you use pictures or how do you do the entry application Sarah Freddie maybe they probably saw that one okay yes what'd you do okay great um what you do is you actually um you with the UM you submit it to rear it which is a social bookmarking website which means that you
have to pretty much submit your photo onto an image hosting platform such as Flickr or photobucket and then bookmark it is what we call it when you submit a link directly onto ree brick within the building challenge category that way we know you're entering the competition and we can evaluate it properly it's a key factor. It's all described in the rules and I think one of the things is a key factor is that to make sure you get a good image so when you take a photo of the creation that you build make sure to to have the lighting right and take a
picture that really shows off the best

00:46:47,349 --> 00:46:54,460
of what you build terrific and again

00:46:51,219 --> 00:46:58,029
that the rules and all the how to's are

00:46:54,460 --> 00:47:02,199
on ww I don't even think you do to the

00:46:58,030 --> 00:47:03,099
w's anymore it's really go com okay

00:47:02,199 --> 00:47:06,699
that's where you can get that

00:47:03,099 --> 00:47:09,400
information okay moving on Trenton

00:47:06,699 --> 00:47:15,159
through Google+ would like to know how

00:47:09,400 --> 00:47:19,119
many entries can you submit is there is

00:47:15,159 --> 00:47:23,139
there a limit uh Freddie yes there is

00:47:19,119 --> 00:47:28,329
okay so you can only submit one entry

00:47:23,139 --> 00:47:31,598
per contest so that means one by the end

00:47:28,329 --> 00:47:34,989
of July 15 for the competition called

00:47:31,599 --> 00:47:40,300
NASA's missions imagine and built okay

00:47:34,989 --> 00:47:44,229
great and Vadhu she from Google+ is
asking can we participate solo or do you

have to be in a team and Leland what do

you think I think you can either go solo

if you want to or you can be part of a

team I think up to five people on the

team and if you get a team bigger than

five then you have to break it off and

create two teams I think that's what

April told me earlier so but but just be

very creative and if if you have maybe

one person working on one

part of the vehicle one person working

another part you can combine those

efforts to make this super super really
cool design that we're going to give you

some thumbs up for awesome so with that

Tammy from Google+ says or asks are

there going to be new Lego products or

kits that come out of this competition

ready um well that's interesting and

this is not something that we are

planning out at this point but I'll have

to say that you never know what's going

to happen so you know if something is is

amazing that's obviously worth

considering and we would of course work

sorry we'd work closely with the person

who submitted the design if we chose to
pursue to pursue that path exactly now

let me ask you all a question then from

the studio daddy Rivera question can the

winner of this competition put their

model on the CUSO site absolutely if

there's AB there's no problem with that

and for those who don't know about Lego

Cuusoo it's a platform where you can't

it's a crowdsourcing platform where

users can submit ideas from new LEGO

sets and if an idea reaches ten thousand

supporters it will be considered for

potential Lego set and that's actually

how the two prizes for the imaginary
future beyond Earth competition came from the Hayabusa and the Mars rover were submitted by a fan and are now in the process of becoming sets awesome and I think the goal of the of the fans and the students and everyone out there is to just blow Legos socks off and you know your inventive creative you know design may make them want to call you right away once they see it so you know use your brains be creative be so you know have some really cool stuff that they won't want to turn you down okay that is definitely something to for sure another question came in from
this time YouTube and it is does it

matter if you are not American to enter

does not matter at all we talked to

someone earlier who's interested in

entering from Mexico and that is most

countries unless it's already unless

it's prohibited there by law it's

completely fine to enter and you can

find a list of the few countries where

there might be complications in the

rules by going to rira calm and clicking

that banner on the front page cool
that's very good okay and here is

another question from google plus and

that is where did the idea of using Lego to construct models for NASA come from

great question and that has come from

the really the team effort that we have done between NASA and Lego over the last few years NASA and Lego came together maybe about five years ago I think with

our very first agreement to form a partnership and we've done a myriad of things from that time we've talked about

one of them which is putting Lego bricks up on the space station where astronauts
can use them to talk about physics and

other things that just can't happen on earth and then this competition is just

another way to again give an opportunity for both organizations to have a

mutually exclusive I mean I'm a mutually beneficial type of outcome for the projects that we do so

it's a team approach from both NASA and Lego okay we have one time for one more

question do we have one more question

Cindy my assistant off camera who is blushing again okay all right well if we
don't that's okay I just want to


to everybody that we have done this

00:52:37,190 --> 00:52:43,309
googles hangout so that we can talk

00:52:40,340 --> 00:52:45,920
about the upcoming actually its ongoing

00:52:43,309 --> 00:52:50,000
the NASA missions imagine and build

00:52:45,920 --> 00:52:53,480
competition it is open and it is going

00:52:50,000 --> 00:52:56,449
to end on july thirty-first that means

00:52:53,480 --> 00:53:01,010
there's only 15 more days before you can

00:53:01,010 --> 00:53:06,950
get an entry in if you guys go to rear

00:53:06,949 --> 00:53:12,679
it got lego.com you can get all the

00:53:06,949 --> 00:53:12,679
information the competition rules what

00:53:04,099 --> 00:53:09,139
we're looking for what the prizes are

00:53:09,139 --> 00:53:14,449
going to be so please do that as April

00:53:12,679 --> 00:53:18,199
has said you know what we're looking for

00:53:14,449 --> 00:53:19,969
is really informed designs and in order

00:53:18,199 --> 00:53:21,859
to have informed designs what do we have
to do we have to know what NASA does

exactly we gotta know you gotta know so

you can find out more about the NASA missions whether it's space-related like

Leland has been had the opportunity to be in space and or if it's doing the Aeronautics aspect of the competition

but check us out on www.nasa.gov for that kind of information um that means

can I had one quick thing as well yes of course April so if you have more

course April so if you have more

questions the Reeb Rick lego.com site

you can actually ask questions so after

we're finished today if you think of
some questions that you forgot to ask or
you go to the site and you still have
some questions just post them there and
then they can be answered so don't worry
this isn't your last chance to ask any
questions all right right and also if
you want to learn more about NASA
education go to www.govt.education
where you can see other activities that
you can do along with this competition
whether it's building rockets or this
exploration design challenge and it's
for teachers is for students is for
grandparents is for the whole k through
gray so check out nasa.gov slash 1170
education wait nasa.gov slash education or other types of activities you can do

great and Freddie are Sarah would you like to give

any closing comments well just remember that you have 15 days so get building

it's a it's two very very cool

competitions go to read bring calm to to see all the rules and as April just said

and you can ask questions there there's anything you find it's not answered in

in the rules so you can write and either

Sarah or I will get back to you and I'm
explaining those exact rules so start

1184
00:55:20,059 --> 00:55:27,920
building cuz we because we want to load

1185
00:55:23,840 --> 00:55:33,730
up his desk hi alright thanks very much

1186
00:55:27,920 --> 00:55:33,730
for being with us bye bye thank you