what is a prototype the way I think

about it a prototype is an experimental

model of an idea it's a way to give our

ideas a presence that we can put in

front of somebody else to see if our

idea has value as a design researcher

here at Google I put ideas in front of

people who use our products all the time

is your idea ready to be put in front of

people yes in fact in this video series

we're share with you several types of

prototyping methods that you can use to

get your ideas in front of people as

soon as possible now how will you know

when it's right to show your idea to

someone else the fidelity of your

prototype should match the fidelity of

your thinking so don't be afraid to

share your prototypes early and often to

get feedback to guide your next product

design decision we put together a series

of three videos to introduce you to

various techniques we use at Google

there's sketching and paper prototyping

digital prototyping with form and

principle and native prototyping so to

get things started let's take a look at

how teams at Google take an idea in

their head and make the first stroke of

the pen on paper hi my name is Melissa

Powell and I'm on Google's developer

relations team I get to work with

designers developers and entrepreneurs

both inside and outside of Google to

solve some pretty tough design

challenges and I'm Miriam Sheikh

a senior a user experience designer at

Google I design add experiences to make

them better and simpler to use for

products such as Google search Adwords

and double-click and we're here to talk

to you about sketching and paper

prototyping I often work in digital

prototyping and graphic design tools to

create high fidelity mocks like these

but even at a high tech company like

Google we generally start the design

process what's something that looks a

lot more like this by the end of the

video you should feel confident knowing

when to use sketching a paper

prototyping for types of sketches we

commonly use at Google and three primary

benefits of paper prototyping sketching

is a fundamental part of the design

process and can help you make key

decisions bow it design it can be as

simple as drawing on a piece of paper or

even a post-it note or you can use any

of these common materials to create a

more realistic sketch and share your

sketch with others sketching can be used

in nearly any stage in the product

design process

you can use different types of sketches

depending on who you're working with and

what you need to communicate sketching

is great when thinking through all of

the initial ideas running through your

head you can sketch to outline the steps

in a user flow explore a variety of

layouts and to show the basic app

structure or what we commonly call a

wireframe once you've agreed on the

rough layout we usually create higher

fidelity sketches with details such as

buttons images and color at this point

you may decide to transfer your sketches

to your digital tools but the more you

can flush out your ideas on paper the

faster you'll move on your computer

during mint development and even post

launch you may need to rethink your

design and want to quickly visualize new

ideas so you might bust out a pen and

paper even if you already have high

fidelity digital prototypes it can be

faster to communicate and validate your

new ideas through sketches before you

have to make those changes to your

digital prototype in addition to

sketching another low fidelity option is

paper prototyping today I'll cover how

paper prototyping can help you think

through key user interactions use color

more purposefully and visualize

elevation and shadows and let me give

you some practical paper prototyping pro

tips as you can see with the sketch that

Miriam created it's easy to visualize

the user flow but it's a little bit more

difficult to understand the user

interactions between the screens you can

use your paper prototype to simulate

interactions for example if we look over

here I've pre created some paper

prototypes and we can explore what

happens when I click on an individual

button here we have the floating action

button or the quantity and we can

actually have it drop down and see what

happens when a new screen appears and

we're looking at the checkout cart we

can also select the address and a pop-up

window will appear to avoid carrying

around your paper prototype from meeting

to meeting record these interactions

with your phone or you can create an

animated gif by taking a few stills

and throwing it into google photos Auto

awesome feature it's just easier to

share your ideas of people that way

another pro tip

to print out existing screens instead of

redrawing all the common elements over

and over the goal here isn't to test

your arts and crafts skills but to

explore the interactions and natural

transitions between screens and since

we're working with paper you can also

explore different principles of material

design such as color elevation and

shadows material design is google's

visual design language that synthesizes

classic principles of good design with

the innovation and possibility of

technology and at the end of the day it

was inspired by the study of paper and

ink so why not get back to basics using

paper and ink a good place to start is

to think through purposeful and

consistent use of colors the material

design spec has a lot of great

information about selecting Hughes and

saturations so be sure to explore the

full material design color palette at

the link in the description below and be

purposeful with your use of color not

just on one screen but throughout the

app in general we recommend choosing one

primary color which is most commonly

used for components such as the app bar

or background and one or perhaps two

accent colors for anything that you want

to grab the users attention such as the

fab or to indicate that a tab has been

selected paper prototyping can help you

think through your purposeful use of

color because as a practical paper

prototyping pro you'll want to reuse the

colors throughout the app not only is

that easier but when this translates to

your final product it will reduce visual

noise for the user making navigation

much easier and because we're working

with physical materials be sure to make

note of how the layers form shadows of

course we have the x axis and the y axis

with material design we're encouraged to

consider and make use of the z axis an

elevation of each sheet you can read

more about elevation and shadows in the

material design spec linked in the

description below as you saw you can use

different types of sketching throughout

the product design cycle to help you

visualize and communicate your ideas in

a lightweight fashion with user flows

rapid sketches and many layout options

wireframes and detailed sketches with

images and text and paper prototyping is

one technique that can help you think

through key use or interactions and

explore material design principles such

as purposeful use of color

elevation and shadows now that you

visualize your ideas on paper you can

shop them around with your teammates or

users to validate your assumptions and

make smarter design decisions you can

translate your sketches into higher

fidelity digital mocks to build a robust

prototype to learn about making a

digital prototype check out the next

video in this series