

# An Intro to Alexa Design

*An Overview of the Key Considerations Related to Designing & Building a Skill*

The relationship Alexa has with customers is powerful, made more so by the skills you create.

# Overview and Purpose

This guide was written for you to be able to efficiently create valuable, engaging, and delightful experiences for your customer across Alexa. It also highlights principles, processes and guidance for agencies related to getting started with design for Alexa skills.



The content within is a snippet of what can be found in greater detail in the [Alexa Design Guide](#) on the Alexa Developer website portal.

What you'll see in this guide is the starting point to successfully designing an Alexa experience, which should be treated as its own entity and not a duplication of an existing channel, like a website or an app.

To ensure continued engagement and retention over time, you'll want to continuously iterate upon your initial designs, especially as your content, product, and offerings evolve and as you capture and interpret customer interactions.

Within this guide, you will find guidance across the following key areas related to the Alexa skill design life cycle:

- **Principles & Patterns:** How to leverage situational design to create purposeful and valuable customer experiences.
- **The Voice Design Process:** Key considerations for building an engaging experience for the customer, as well as guidance on navigating the design of conversations via Alexa skills.
- **Visual Design:** Key considerations related to the visual component of Alexa skills.
- **Best Practices & Tips:** Additional considerations for designing a skill, including additional resources to reference.







# 1

An Overview of Where Skill Design Begins

## Principles & Patterns of Skill Design

In this section, we introduce you to the design patterns that will help you construct and shape your Alexa skill(s). These design patterns focus on situational design – in other words, the design format that will help you create voice-first skills that are natural, user-centric, and accompanied by complementary visual design.

The four design patterns that accompany situational design are:

- *Be Adaptable*: Let users speak in their own words.
- *Be Personal*: Individualize your entire interaction.
- *Be Available*: Collapse your menus, make all options top-level.
- *Be Relatable*: Talk with them, not at them.

We start here because setting a strong knowledge foundation is imperative when building a new product. If you master these design patterns, you will gain a better understanding of how to provide value to your customers' business and connect with the rest of your client's digital world.

# Be Adaptable

*Let users speak in their own words.*

Not all customers are the same, which means there is no guaranteeing all utterances will be the same. Being able to understand and process a variety of utterances is imperative to providing a seamless and valuable customer experience.

Below previews some of the top adaptability-related design patterns you can use to ensure your skill will comprehend, process, and respond to a wide range of utterances. For the full set, please visit the [Be Adaptable](#) section of the Alexa Design Guide or click on each of the individual guidelines to the right to go to that specific section of the Guide.

- *Never assume customers will say the exact phrase that you anticipate for an intent; design against a range of utterances.* [Learn more ›](#)
- *Sometimes a customer will indicate multiple answers in one response, which means the Q&A path will need to be responsive.* [Learn more ›](#)
- *Sometimes the customer is vague, and doesn't clearly indicate their command or request. Create clarifying questions and statements.* [Learn more ›](#)
- *Customers may take it upon themselves to course correct an Alexa misunderstanding using "I said" or "No." Plan for these scenarios.* [Learn more ›](#)
- *Be upfront when the skill doesn't understand a request and use a straightforward response to let the customer know what they can do.* [Learn more ›](#)



To learn more about this design pattern please review the [Be Adaptable](#) section of the Alexa Design Guide.

[Match a variety of utterances to your intent](#)

[Handle over-answering](#)

[Ask for more information](#)

[Accept corrections](#)

[Handle errors gracefully](#)

[Design for when Alexa doesn't understand](#)

[Design for when Alexa understands but can't help yet](#)

[Re-prompt when the customer does not respond](#)

[Provide contextual help](#)

# Be Personal

*Individualize your entire interaction.*

Conversations are inherently personal (and contextual!) and the same should apply to your voice-first skill. By personalizing the experience for customers, you reward them for their use of the skill, as well as create familiarity with the experience overall.

To personalize conversations and move the discussion forward, you'll need to collect and store information about the customer's interactions. In these moments, you'll need to determine what information must be stored and what can be discarded once an individual session is complete. Below are a few ways you can begin to personalize your skill.

Below previews some of the top personalization-related design patterns you can use to ensure your skill provides a more valuable and personalized experience. For the full set, please visit the [Be Personal](#) section of the Alexa Design Guide or click on each of the individual guidelines to the right to go to that specific section of the Guide.

- *Skills should understand the status of the customer – whether they are returning to an experience or starting a new one. Skills should address the customer by name, include several variations of welcome messages, and afterward should immediately ask the customer what they'd like to do. Reminders should be considered to refresh the customer on the skill's capabilities. [Learn more ›](#)*
- *As a customer gets more familiar with your skill, they won't need the same prompts as they received their first time. Consider making subsequent prompts shorter and more direct. [Learn more ›](#)*



To learn more about this design pattern please review the [Be Personal](#) section of the Alexa Design Guide.

[Recognize new and returning customers](#)

[Capture information through skill use](#)

[Use adaptive prompts](#)

[Access a customer's location](#)

[Resume a skill session after exit](#)

# Be Available

*Collapse your menus, make all options top-level.*

Build your skill so that the customer can access it through a variety of ways in, providing a way to trigger an action or intent a number of ways. Building your skill in a horizontal, voice-first design will keep all options open for customers; a nested, vertical menu pattern that is used in GUI designs will not.

Below previews some of the top availability-related design patterns you can use to ensure your skill provides a more convenient and intuitive experience. For the full set, please visit the [Be Available](#) section of the Alexa Design Guide or click on each of the individual guidelines to the right to go to that specific section of the Guide.

- *Skills wait eight seconds before re-prompting a customer if they've remained silent or haven't answered a question. Shorten a re-prompt for brevity when a customer is familiar enough with the context of the conversation that they won't need the entire prompt again immediately. [Learn more](#) ›*
- *When a customer asks a question, be sure to provide them a finite number of answers/choices to avoid ambiguity. [Learn more](#) ›*
- *For articles or lengthy information read aloud, avoid showing all items without first indicating how much information there is. [Learn more](#) ›*
- *When reading a list, have Alexa introduce it (i.e., "Here are the top gluten-free recipes") and then pause briefly between items in the list. [Learn more](#) ›*



To learn more about this design pattern please review the [Be Available](#) section of the Alexa Design Guide.

[Create an effective invocation name](#)

[Design for response time limits](#)

[Create a simple set of options](#)

[Create well defined, concrete tasks](#)

[Avoid tasks with complex input and high ambiguity in searches](#)

[Find the top three best matches to the input](#)

[Announce items in a list](#)

[Make lists brief](#)

[Ensure effective pacing with lists](#)

[Prompt customers for Alexa to say more list items](#)

[Engage customers with questions](#)

[Prompt with guidance for the customer](#)

[Avoid unnecessary yes/no confirmations](#)

[Keep either/or questions short](#)

[Complete the task and end the skill session](#)



# Be Relatable

*Talk with them, not at them.*

Conversations are a two-way street. They are based on listening and responding, and repeating that two-step over and over. The same goes for how you design your skill. It must talk *with* your customers, not *at* them. Your customers need Alexa to speak concisely to help them understand what information your skill needs and what your skill does.

Below previews some of the top relatability-related design patterns you can use to ensure your skill will have a two-way conversation. For the full set, please visit the [Be Relatable](#) section of the Alexa Design Guide or click on each of the individual guidelines to the right to go to that specific section of the Guide.

- *Try to use your own natural language when writing scripts. Test this by acting out the dialogue with another person. [Learn more](#) ›*
- *Read scripts aloud after you've written them. If you can say the words at a normal pace in one breath, the length is probably good. [Learn more](#) ›*
- *List options in the order of most to least contextually relevant. [Learn more](#) ›*
- *Use the same tense and format for nouns and verbs, especially for items in a series. [Learn more](#) ›*
- *Explore a selection of responses to avoid monotony in common or repeated interactions. [Learn more](#) ›*
- *"Thanks," "got it," "okay" are markers to let the customer know they've been understood. [Learn more](#) ›*



To learn more about this design pattern please review the [Be Relatable](#) section of the Alexa Design Guide.

[Write it the way you'd say it](#)

[Be brief](#)

[Apply the one-breath test](#)

[Be contextually relevant](#)

[Use parallel language](#)

[Add variety](#)

[Vary Alexa's responses in repetitive tasks](#)

[Use conversation markers](#)

[Use timeline markers](#)

[Use acknowledgements and feedback](#)

[Use pointers](#)

[Use transitions](#)

# 2

Bringing An Alexa Skill To Life

## Understanding The Voice Design Process

An Alexa skill is not simply a duplication of a website or app into a voice experience. It is its own experience based on unique interactions through conversation. As you determine what type of Alexa skill to create, you need to define not only its overall purpose but also its unique value proposition, as well as surface what the customer will be able to do with it conversationally.

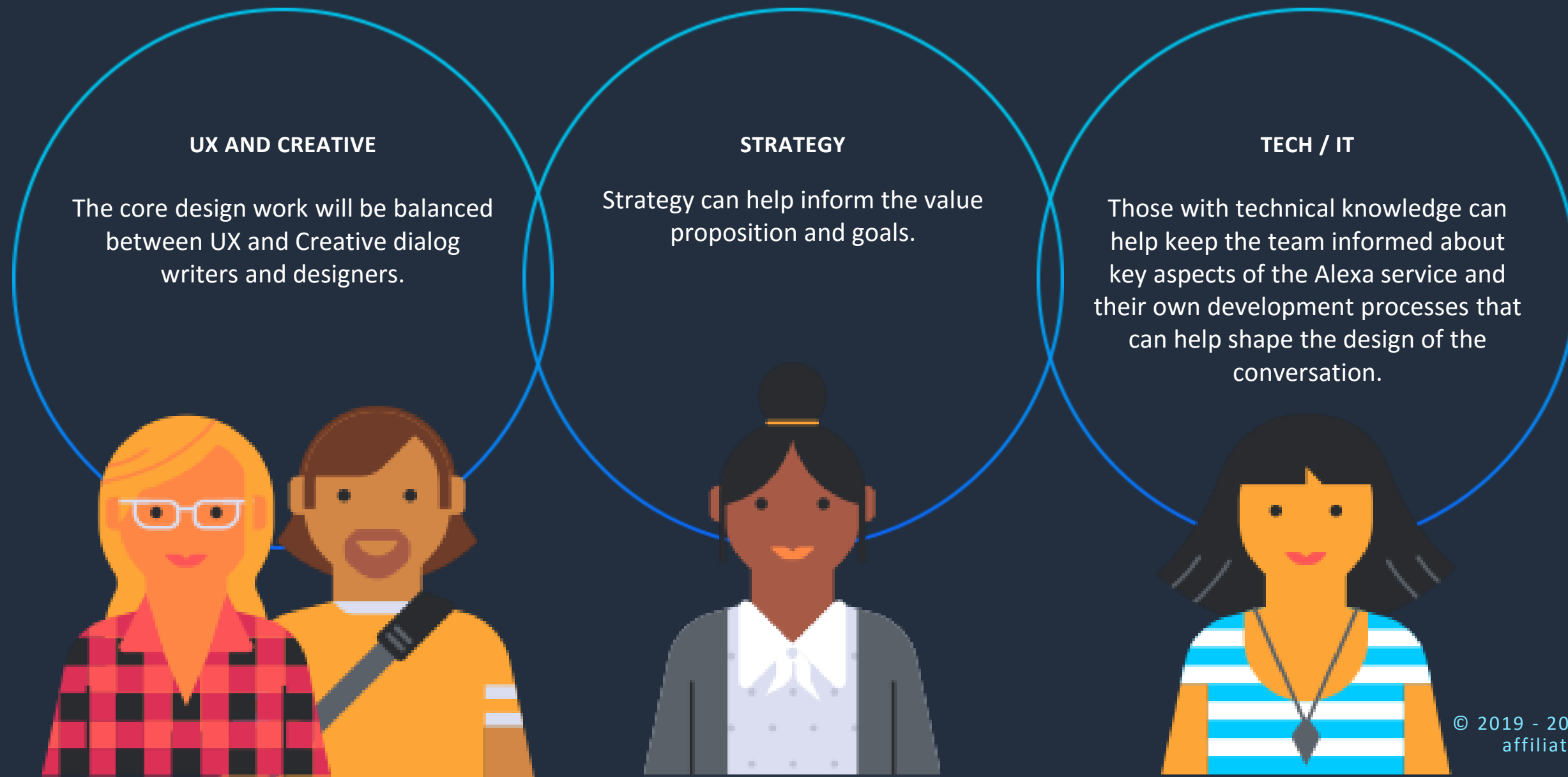
Once you've outlined what the skill will provide the customer, you can then begin to shape the conversation to support this. Conversations consist of a series of turns, each with a set of considerations to ensure it moves forward toward the desired outcome. You can represent these turns in scripted dialog storyboards that define the many customer-driven paths the voice experience may take.

This section of the Alexa Design Guide is broken into three parts to help you bring the design of the skill to life. In it, the Alexa Design Guide helps provide guidance as you:

- *Assemble your voice design team*
- *Decide what kind of skill to build*
- *Write out a script with conversational turns*
- *Build your design artifact*

# Assembling a Team

As you approach designing voice experiences for the Alexa service, you'll want to make sure you have the right team set up for the job. Consider assembling a cross-functional team with members from Strategy, User Experience (UX), Creative and, when possible, IT/Tech.



# The Voice Design Process at 20,000ft



## Define the Value Proposition

You've decided you want to create a skill – great! Now, you must ask yourself “what value will this bring to the customer”; in other words, “[what is the value proposition](#)”? This is critical.

Like any channel, you should understand the benefits for the customer and the needs it addresses or pain points for which it solves.

Alexa offers a variety of [skill types](#) with built-in capabilities that you can use, or, if you prefer, you can create your own custom skill.



## Write a Script

Now that you've decided on the type of skill you want to build and its purpose for and value to customers, it's time to [get started on its script](#).

Writing a script is a way to visualize any number of pathways (or conversational turns) that a customer might take when interacting with your experience.

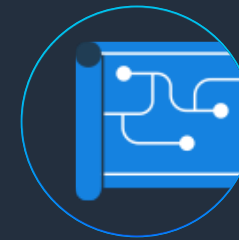
A basic script won't fully represent how customers will interact with your skill in real life, so you'll need to account for [unexpected turns in the conversation](#).



## Test the Dialogue

As you write scripts, define turns, and create a storyboard to represent the flow of the customer's conversation and your skill's interactions/responses, you'll want [to iteratively test these elements](#) to ensure they're natural and conversational in nature.

To do so, test your dialogue out loud with a friend or colleague. This will expose edge cases you've not thought of as well as will temperature check the flow.



## Define the Turns & Storyboard

[Understanding the elements of a conversational turn](#) is critical to a successful dialog with your customer.

The next step in the script writing process is to take your scripts, which have outlined some of your turns, and [convert them into storyboards](#) (aka, a linear progression through time).

This conversion enables you to think through all the common skill paths and to add [situational variations](#) and address error cases.



## Build the Interaction Model

After you figure out the dialog and potential flow of the design, you'll need to connect these back to the way you'll build your skill.

You'll want to map customer utterances to intents, which represent the unique actions the skill can take. This is called the [interaction model](#).

Not all customers will invoke an intent the same way, so you'll want to prepare for every thinkable scenario.

# The Fundamentals of Building a Script

Once you decide on the type of skill you want to build and its purpose for and value to customers, it's time to get started on its script. Writing a script is a way to visualize any number of pathways (or conversational turns) that a customer might take when interacting with your experience. A script helps you stress-test your skill's logic to ensure you've captured any necessary errors and pertinent conversational variables.

When script-writing, it's important to:

- [Understand the elements of a conversational turn](#)
- [Write the shortest route to completion](#)
- [Create alternative paths](#)
- [Note the behind-the-scenes system logic](#)
- [Write out welcome, help, and error messages](#)
- [Give it a test run](#)

## Why should we start our skill design with scripts?

Situational design is based on thinking through how people are actually going to talk, the scenarios that are driving the dialog, and then designing for the conversation. This approach allows you to start by focusing on the conversation with your customer. Getting stuck in flowcharts and logic can cause you to miss the nuances of how the conversation sounds and how it is driven by the dialog between the customer and the skill. For additional background on situational design, you can review the [design guide](#), review additional [background on situational design](#), and review this [video on how to switch from screen-first to voice-first design](#).

## When is the right time to do testing of a skill?

You should consider testing a key component of designing and building a skill. It is an iterative cycle and will allow you to understand how customers are interacting with prompts and dialog that makes up the conversation. With regards to when testing should occur, it should start early in the design phase as you are laying the foundation of your scripts to help you refine the dialog.

You should also be testing the design and refining it throughout the build process to identify any necessary script and utterance adjustments. Functional testing with partners like PulseLabs should also be considered.



# Unpacking Conversational Turns

What is a conversational turn, you might ask? To put it simply, it's the order of operations in a conversational flow. So what does *that* mean? Let's take a look at the example to the right, the elements labeled 1-4 representing one conversational turn.

1. **Utterance**: The dialogue or utterance that the customer says to start the conversation.
2. **Situation**: Identify the context of the conversation. For example, the first time that the customer uses the skill.
3. **Response**: How Alexa answers the customer's utterance.
4. **Prompt**: Alexa's prompt back to the customer, ending the turn.

Here, the customer indicates in (1) the action they want Alexa to take (open a particular skill), after which (2) Alexa takes that action (opens the skill). This is followed by a welcome message from Alexa (3) that responds to the customer's request, which is then followed by a prompt (4) to keep the conversation going and request an action from the customer (to indicate what they'd like to make).

Compiling these turns onto storyboards helps you outline the flow of your experience and account for the variables that make up conversation.



To learn more about conversational turns please review the [Conversational Turns](#) section of the Alexa Design Guide.

1

### UTTERANCE

Alexa, Open Recipe Master.

2

### SITUATION

Opens skill for first time

3

### RESPONSE

Howdy! Welcome to Recipe Master. I have thousands of recipes, and in minutes I can help you get an affordable, tasty, and nutritious dinner on the table.

4

### PROMPT

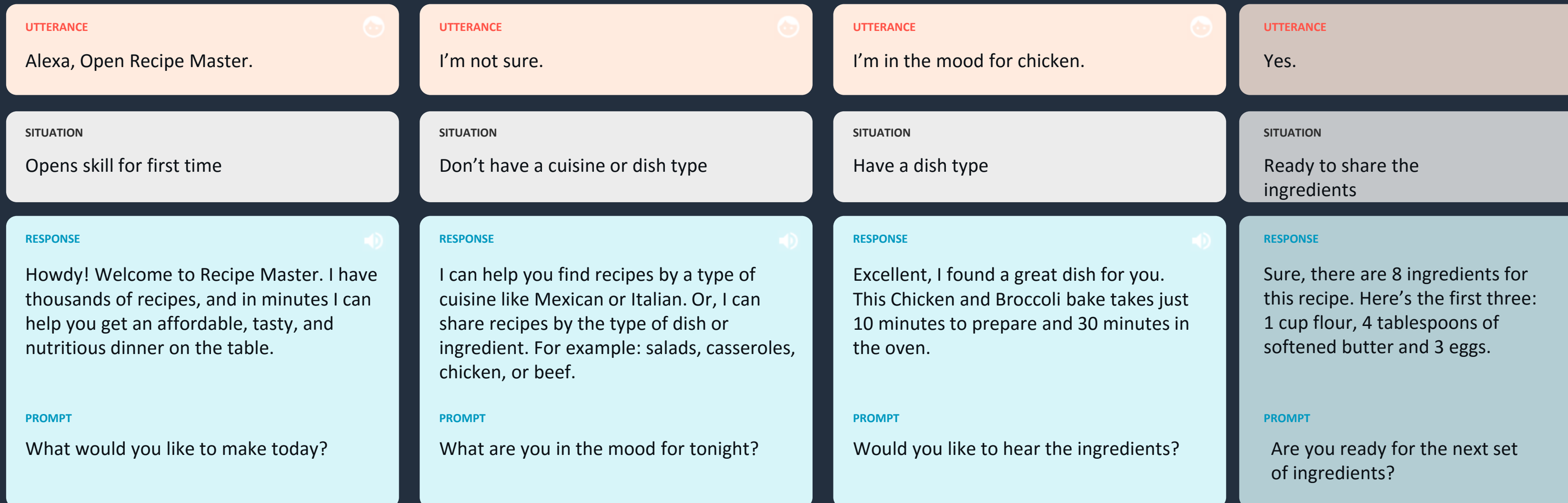
What would you like to make today?

# Creating a Storyboard



To learn more about storyboards please review the [Build A Design Artifact](#) section of the Alexa Design Guide.

Storyboards are linear progressions through time that allow you to think through all the common paths and to add various situations and error cases. They are more conversational in nature than a standard flowchart typically found in UX design. Once you've identified the optimal way a customer navigates your skill, also called the "happy path," you begin to identify variations such as different ways the skill may open based on the number of times the customer has used the skill.

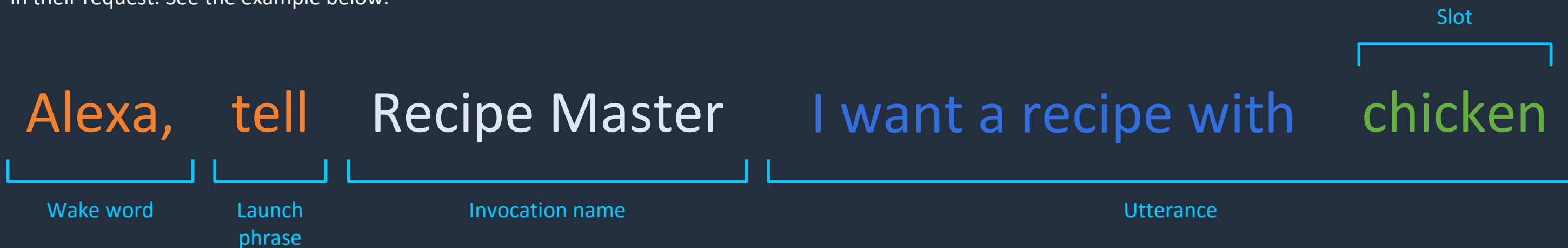


# Defining The Interaction Model



For more on Intents, Utterances and Slots please refer to [Define the Interaction Model](#) in the Design Guide.

Now that you've defined the conversational elements and flow of your skill design, it's important to pivot to the aspects of the conversation you will need to build into your skill to drive the conversation forward. These aspects make up the interaction model and are comprised of intents, utterances, and slots. Utterances are what customers say to get the skill to do “something.” Intents are that “something” that happens as a result of the utterance. Slots are the variables that allow the customer to customize an utterance and get more specific in their request. See the example below.



[This section of the Alexa Design Guide](#) focuses on preparing the intents and utterances necessary to power the conversation between your skill and your customer. It provides guidance and examples related to the variations, breadth, depth, pronunciation handling, and clarification handling you will need to plan for in your interaction model. In addition, you can learn about built-in intents which are intents and associated utterances that the Alexa service has already identified and configured. They include intents that are common (such as intents that provide the ability for the customer to say Yes and No), as well as those which are required of every Alexa skill, such as the ability to cancel, stop, or ask for help.

# 3

Designing For Screen-Based Devices

## Visual Design for Alexa Experiences

Once you've established the voice design for your skill, it's time to consider how to incorporate visual design into your Alexa experiences. There are a number of design considerations for devices with a screen that accompanies your voice-first experience.

The Alexa Design Guide includes guidance and direction on the use of Alexa's visual design framework, the Alexa Presentation Language (APL). In the following section you'll find an overview of APL and reference to specific sections of the Alexa Design Guide to help you implement the visual elements APL provides to shape multimodal voice experiences.

This section also provides an introduction to the various device types through which Alexa is available and links to explore individual usage considerations with each device type.

# Alexa Presentation Language

Multimodal voice experiences can make skills more delightful and engaging for the customer.

As you consider designing for devices with a screen to provide visual accompaniments to your voice-first experiences, you'll need to understand and utilize the visual design framework Amazon has provided for Alexa.

The [Alexa Presentation Language](#) is adaptable so one design can scale to multiple device types while keeping the visual and voice elements synchronized. You can also reuse designs across multiple skills and share your designs with others. Having the ability to design across devices allows you to tailor the experience to targeted device types and audiences.

These visual elements facilitated by APL include the use of:

- Graphics
- Images
- Slideshows
- Video

To learn more about the Alexa Presentation Language from not only a design perspective but a technical perspective as well, please visit the dedicated [Alexa Presentation Language section](#) on the Developer Portal.



For more on the Alexa Presentation Language please refer to [APL section](#) in the Design Guide.





# Alexa Presentation Language

As you take a script, think about not only how it will be translated visually, but also how those visuals will scale across devices. From larger devices like a TV or an Amazon Hub to smaller devices like the Echo Show, the space you have will dictate your design dependencies and considerations. On this slide you'll see the recipe example we've used throughout visually displayed on a Hub and a Show.



## UTTERANCE

Set a timer for 45 minutes.

## SITUATION

Set a timer for cooking chicken.

## RESPONSE

Will do! I'll set 30 minutes on the timer now for your Chicken and Broccoli bake.

## PROMPT

N/A. End session. Show countdown on screen.

# Understanding the Device Landscape

Alexa is available [on a range of device types](#) with their own inputs, characteristics and usage considerations. By using APL you can design a single voice-optimized experience that easily scales and adapts to every Alexa-enabled device.



## Speakers

Speakers are the category of Alexa-enabled audio devices without a screen, though some might offer a compact or low-resolution screen. Customers primarily use speakers to listen to audio. They can be standalone devices or those connected to other devices, such as a soundbar connected to a TV.

[Learn more about Speaker devices](#)



## Hub

Smart displays, such as the Echo Show or Echo Spot, intercoms, and other fixed home devices that are used for music, communications, and entertainment. Hubs have a wide variety of screen sizes and often have touch capabilities.

[Learn more about Hub devices](#)



## Television

Televisions, set-top boxes, and projectors that are primarily used for entertainment. Televisions have a range of screen sizes and aspect ratios, can use touch and a remote as inputs, and can have additional speakers connected to create a home theater experience.

[Learn more about Television devices](#)

# 4

Bringing An Alexa Skill To Life

## Best Practices & Tips

On top of the learnings, principles, and practices found in the previous three sections, these next few pages detail additional best practices and tips related to planning for, designing, and building an Alexa skill for your client. The categories this section touches on are:

- *Establishing and Maintaining Trust*
- *Using Different Audio in Your Skill*
- *Child Directed Skills*
- *In-Skill Purchasing*
- *Making Your Skill Accessible to All*
- *Designing for International Markets*

# Additional Guidance for Skills



To learn more about each best practice, please visit [Best Practices by Category](#) in the Alexa Design Guide.

There are a number of best practices you should consider when developing Alexa skills for your clients. These fall into six distinct categories, of which a preview of each is highlighted below.

Visit each individual section to learn about the nuances related to each best practices or visit the [Best Practices by Category](#) section of the [Alexa Design Guide](#).

## Establish and Maintain Trust

- Maintaining a trusted relationship with your customers is key and can help build a loyal customer base for your skills and devices, helping grow Alexa's credibility for customers as a virtuous cycle. Knowing what builds up (confirmations in high-risk situations, conversational language, etc.) and breaks down (offensive, unsolicited content, unmet expectations, etc.) trust is crucial.

## Use Different Audio in Your Skill

- Consider different voices throughout the experience to break up the monotony of one singular voice. You can add [Amazon Polly](#) voices to your characters or explore your own voiceovers if you have an actor for your brand. Audio clips and speechcons can help make your skill more fun and engaging.

## Child-Directed Skills

- Designing for children can be challenging but at the same time rewarding. There are a number of restrictions on child directed skills, including the inability to collect information or link account information. You are also not able to sell products or advertise.

## In-Skill Purchasing

- This feature allows you to sell premium digital content in your skill. To do this successfully, products for sale should be engaging, high quality offerings provided to the customer only when appropriate.

## Make Your Skill Accessible to All

- Skills can reach many people, and as you design, it's important to keep in mind customers that might have disabilities (which can be temporary, permanent, or situational). Disabilities can range from having both hands busy driving or having low or no vision.

## Design for International Markets

- You have the option of publishing your skills to international markets where Alexa is available. In terms of language, Alexa currently supports: English, Spanish, German, Swedish, French, Japanese, Hindi, Italian, and Portuguese.

# Additional Resources for Agencies

The [Alexa Design Guide](#) includes a number of additional resources such as a [Design Checklist](#) and [related articles and documentation](#) that will help provide guidance on voice and visual design as you design your skill.

In addition you can review some skill building resources such as:

- [The Build Skills with Alexa Skills Kit](#) will help you understand the various models, functions, and more related to skills.
- [The Alexa Presentation Language \(APL\) Overview](#) will help you understand how APL works with your skill as well as other related topics.





amazon alexa