

This study guide contains information that will help you prepare to judge the four classes that will be part of our Cotton Boll and Consumer Judging Contest this year. **Important to note: Laptops, Sports Equipment, Sandals, and Energy Drinks will be at the Area Cotton Boll and Consumer Judging Contest. The other two classes (Food Delivery Service and Carry-On Luggage) will be added in addition to these at the State Contest in December.**

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GE  **RGIA**
4-H COTTON BOLL &
CONSUMER JUDGING

Laptops

Laptops are great because they're tough enough to handle rigorous applications and they're also compact enough to take with you when it's necessary. Whether you're on the road, at home, or in a classroom, laptops are the best tool for getting serious work (or play) done. There's a wide variety of sizes, features and prices, which makes choosing the best laptop a challenge. That's why you need to figure out what your needs are.

- *Type of Use:* More demanding users will want to invest a bit more in a higher resolution screen, a more powerful processor, more system memory, and a larger drive or a fast solid-state drive.
 - Light use: Browsing the web, paying bills online, emailing, social networking, organizing and sharing digital photos.
 - Average use: Storing and streaming music and movies, tasks like spreadsheet and document creation.
 - Demanding use: Multitasking with multiple tabs and programs, sophisticated graphics and photo editing, and video production.

- *Operating Systems*

The operating system is the heart of your laptop. It manages all software and hardware, including files, memory and connected devices. Most importantly, it lets you interact with your laptop and your programs in a visual way (otherwise, you'd be typing a bunch of computer code to get anything done)

- *MacOS*
 - Installed exclusively on Mac computers, MacOS boasts an elegant and easy-to-use interface to complement Mac's sleek aesthetics and impressive battery life. Macs have historically had fewer issues with viruses and malware. However, MacBooks start at a higher price point than other laptops. No Mac model to date includes touch-screen functionality.
- *Windows*
 - Windows is designed specifically around an intuitive touch-screen interface (though it can be used with a traditional mouse and keyboard), expanding your navigation options. The integrated Windows Hello feature lets you log in quickly using a look or a touch instead of a password, while remaining enterprise-grade secure. It also offers an updated task manager, streamlined file management, and a suite of built-in apps.
- *Chrome OS*
 - Chromebooks are laptops that run Chrome OS – the fast, simple and secure operating system built by Google. Chrome OS is built for the web and is tailor-made to run on Chromebook hardware. Chromebooks leverage the Google Play Store, which means they can run millions of apps, including games, document creation, and photo editing apps. Google collaborates closely with popular manufacturers to ensure every Chromebook has built-in security, boots up, performs fast, and stays easy-to-use with automatic updates.

- *Screen features:* Smaller devices are gaining popularity because of portability, efficient pricing, and becoming more effective than ever before. However, for others the scale of their screens also seems like a compromise. If you're working on heavy picture or text papers, you're going to be more effective on a big screen that isn't portable.
 - *Touch Screens:* make navigating on your computer more intuitive. Tap to select, hold and drag to move items, swipe to scroll and pinch to zoom, just as you would on a smartphone or tablet. Currently available on many Windows laptops and select Chromebooks.
 - *Screen Size:* Laptop screen sizes range from about 11 up to 17 inches, measured diagonally. A larger screen is ideal for gaming, watching movies, photo and video editing, and viewing documents side by side. Keep in mind, a big screen can increase the overall size, weight and power consumption of a laptop.
- *Resolution:* Higher resolution equals better picture quality. Laptop screens come in a range of resolutions (measured in pixels, horizontal x vertical).
 - *4K Ultra HD:* 3840 x 2560 and 3840 x 2160 resolutions boast four times the pixels of Full HD, creating rich colors and images for viewing and editing incredibly lifelike images and graphics.
 - *QHD (Quad HD) and QHD+:* With 2560 x 1440 and 3200 x 1800 resolutions, respectively, the extremely high pixel density creates crisp detail and sharp text, ideal for professional photo and graphics work as well as high-def movies and games.
 - *Retina display:* 2560 x 1600 and 3072 x 1920 resolutions are found in Apple's 13" and 16" laptop displays, respectively.
 - *Full HD:* 1920 x 1080 resolution allows you to watch Blu-ray movies and play video games without losing any level of detail.
 - *HD+:* 1600 x 900 resolution is great for casual gaming and watching DVD movies.
 - *HD:* 1366 x 768 resolution is standard on mainstream laptops. Good for web surfing, email and basic computing tasks.
- *Display types:* Different display technologies yield different colors and brightness levels. Many laptops employ LED backlighting, which can display bright colors without draining the battery. If you plan to use your laptop to watch movies and shows with a friend, choose a display with an IPS panel for wider viewing angles. Screens with a glossy finish generally provide richer colors and darker blacks, while matte displays will reduce glare if you frequently work outdoors or near windows. Laptop models featuring a narrow bezel – the border around the screen – allow for more display space to fit within the laptop's form factor.
- *Processors:* Your laptop's processor is like its brain. Working in combination with system memory, the power of the processor determines the complexity of software you can run, how many programs you can have open at the same time, and how fast those programs will run. Most laptops feature an Intel® or AMD processor.

Intel Processors: Intel processors give you the widest range of laptop choices among brands, form factors, display options, and even operating systems. Most prevalent are Intel's Core series of multicore processors.

- *Core i9:* Intel's top-tier processor for gaming experiences and high-demand content creation and editing, including 4k or 360 videos, high-resolution photos, and high-quality audio.
- *Core i7:* A popular choice for "power users" like gamers, graphic designers, photographers and videographers. It excels at serious multitasking and multimedia creation for projects in 3D or high definition.
- *Core i5:* Mid-grade Core processor that is powerful enough for most computing tasks and multitasks well so you can stream a football game while looking up stats and sending emails.
- *Core i3:* The entry-level Core processor, more than adequate for everyday email, internet browsing, and productivity tasks. It's also fine for common activities like listening to music.

AMD Processors: From work to play, AMD Ryzen mobile processors with Radeon Vega graphics deliver multitasking performance, stunning visuals, and healthy battery life, while allowing for a sleek form factor.

- *Ryzen 3:* Start here for performance on the go. Maximize browsing, streaming and creating with 4 ultra responsive 7 nm Zen 2 cores and AMD Radeon graphics. Great for home, school and office productivity with up to 4K resolution.
- *Ryzen 5:* The responsiveness you need for all-around multimedia performance. Ideal for home, school and office, 6 ultra responsive 7 nm Zen 2 or Zen 3 cores with integrated AMD Radeon graphics stream in up to 4K. Great for AAA and esports gaming, as well as image and video editing.
- *Ryzen 7:* Accelerate everything you do. Experience desktop-caliber performance with smooth frame rates while editing videos, running demanding applications. and playing the latest games and esports. 8 high-performance 7 nm Zen 3 cores are optimized for pairing with high performance discrete graphics cards.
- *Ryzen 9:* AMD's premium processor delivers performance for elite gaming and content creation. 8 high-performance 7 nm Zen 3 cores are optimized for pairing with high performance discrete graphics cards. Great for AAA and esports gaming, intensive image and video editing, and gaming while streaming and recording.
- *Athlon 3000 Series with Radeon graphics:* Discover a world of quick apps, beautiful entertainment, modern features, and long-lasting battery life. Ideal for everything from completing everyday tasks to streaming your favorite movies — at home or on the go.

Apple Processor: The Apple M1 chip is Apple's first chip designed specifically for Mac and can be found in the latest generations of MacBook Pro and MacBook Air. The Apple M1 system on a chip (SoC) integrates the CPU, GPU, Neural Engine, I/O, and more. It delivers on performance, custom technologies and power efficiency.

- *Memory:* Random-access memory, or RAM, is important because it helps your processor tackle multiple tasks at once. A minimum of 2 gigabytes (GB) is required for basic computing, and 12GB or more is recommended if you're into graphics and advanced photo

or video editing. Most laptops have 4GB–12GB pre-installed, and some have up to 64GB. If you think you might need more memory later, choose a model that lets you expand the RAM.

- *Internal Storage:* Traditional hard disk drives (HDDs) offer larger storage capacities but add to a laptop's weight and thickness while generating heat and noise. Alternatively, solid state drives (also known as SSDs) and flash storage are much lighter, faster, cooler and quieter than hard drives – but they're also more expensive per GB, so typically they provide less storage space. When it comes to storage capacity, 32GB will get you by if you predominantly use a cloud service or stream, although a minimum of 64GB will give you more flexibility when you're offline. If you intend to store high-res photos and videos on your laptop, consider a drive of 256GB or more. If you will be downloading games and 4K movies to your laptop, plan on a capacity of at least 512GB.
 - *Hard disk drives:* Traditional, mechanical hard disk drives are still found in some laptops because they're relatively inexpensive and offer huge capacities for your money. However, as noted above, they also add significantly to a laptop's weight and thickness and generate both heat and noise. Hard drives come in two standard speeds – 5400 rpm drives, sufficient for day-to-day web surfing, emailing and document creation, and 7200 rpm drives, which transfer data more quickly. The faster 7200 rpm is worth considering if you regularly work with large files.
 - *Solid state drives:* SSDs are many times faster than hard disk drives, but typically offer less capacity (although their overall affordability has improved considerably in recent years). SSDs also offer tremendous advantages in physical size, weight and power efficiency, along with negligible heat production and noiseless operation, making them an ideal choice for ultra slim, ultralightweight laptops. And unlike hard disks, SSDs have no moving parts to wear out; this also makes them better able to withstand bumps and jolts as you carry them with you. Some laptops employ an SSD for all storage. Others dedicate a smaller SSD to house the operating system and applications (enabling faster start-up) and add a traditional hard drive for general data storage.
- *Battery life:* Manufacturers' battery-life claims range from just a few hours up to 12 hours or more. Laptop enhancements – such as increased processing power, larger and higher resolution screens, faster hard drives, or the addition of an optical drive – will drain your battery more quickly. Other laptop features – for instance, a solid-state drive instead of a mechanical hard drive – can improve power efficiency.
- *Connectivity:* Laptops typically provide several options for staying connected to the internet as well as to other devices. Most laptops provide the latest Wi-Fi 6 wireless networking standards plus Bluetooth capabilities, so you can easily sync your smartphone, speakers and other accessories. Some laptops also feature a voice assistant. Some of the latest MacBook models include Siri, and a growing number of laptop PCs have Amazon Alexa built in, which helps you easily keep track of tasks, control connected smart home devices, and more.
- *Ports:* Keep an eye out for the following ports that are commonly used for connecting to TVs, cameras and other devices.

- *USB Type-A*: This legacy port lets you connect external drives, gaming controllers, headphones, and other accessories. USB 3.0 ports are distinguished by a blue insert and transfer data faster than USB 2.0 when used with USB 3.0 devices. They are backward-compatible with legacy USB 2.0 devices but limited to 2.0 speeds.
 - *USB Type-C*: This latest iteration provides blazing speeds and versatile power. USB-C features connectors with identical ends that plug in upside down or right-side up. Adapters allow for video as well as backward compatibility with Type-A ports.
 - *Thunderbolt*: Ultra-high bandwidth for fast data transfer between devices featuring a Thunderbolt or Mini DisplayPort connection.
 - *HDMI or mini-HDMI*: Connect a projector or display HD media on your flat-screen TV.
 - *Media card slots*: Transfer photos from the memory card in your digital camera or camcorder.
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- *Security*: Some laptops offer additional physical security features to help safeguard you and your information. Look for laptops with a fingerprint reader to easily unlock your laptop, or a webcam privacy shutter or kill switch to prevent hackers from seeing in through the camera.

Resources:

Shopping for a new laptop

<https://www.bestbuy.com/site/buying-guides/laptop-buying-guide/pcmcat310900050007.c?id=pcmcat310900050007>

Laptop Guide: 10 questions to ask yourself before buying

<https://news.techdefenders.com/blog/laptop-guide-10-questions-to-ask-yourself-before-buying>

Sandals

Whether you're looking for a casual pair to wear around the house or a stylish pair to complement your wardrobe, there are plenty of sandals to choose from. But with so many options, it's important to know what to look for when buying sandals.

Activity Awareness

You might be eyeing up that more fashionable pair of sandals, but they may not provide your feet with much support based on what you plan to do when you don the footwear. Lightweight sandals are great for walking, closed toe sandals are preferred for simple hikes or city walking and a more durable/waterproof pair may be better for camping or rafting. Don't just buy for looks, buy for use!

Comfort

When it comes to sandals, comfort is key. Look for sandals with cushioning and arch support, as these will help to reduce foot fatigue. Also, make sure the straps fit comfortably and don't pinch or rub against your feet. If you're planning on doing a lot of walking in your sandals, be sure to choose a pair with a good tread. This will help to prevent slips and falls on wet or slippery surfaces. Finally, don't forget to factor in style when choosing your sandals. After all, you want to look good as you're strolling along the beach or taking a leisurely walk through the park.

Quality

When it comes to choosing the perfect pair of sandals, quality should be one of your top priorities. After all, you want your sandals to last more than just a few wears. Fortunately, there are a few different materials that are known for their durability, such as leather and rubber. These materials are not only long-lasting, but they're also flexible; they'll be comfortable to wear, even after spending a long day on your feet. So, when you're shopping for sandals, be sure to look for pairs that are made with durable materials. Therefore, you can enjoy them for years to come.

Style

There are so many different types of sandals on the market these days. It can be hard to decide which pair is right for you. With a little bit of thought and consideration, you can find the perfect pair of sandals to complement your wardrobe and your personal style. One thing to consider when choosing sandals is the type of activities you'll be doing in them. If you're planning on doing a lot of walking or hiking, you'll want a pair of sandals that offer good support and traction. If you're mostly just looking for a pair to wear around town or to the beach, you can go for a lighter, more stylish option.

Arch Support

You want to buy a quality shoe with ample foot support. A lot of cheaply made sandals are little more than cardboard and fabric, which can put unnecessary stress on your feet. If you plan on wearing your sandals regularly, ensure that you buy something that supports your feet and keeps them comfortable.

Heel Height & Cushioning

Heel height is an important factor to consider when buying sandals. If you plan on wearing your sandals for long periods of time, go for a flat or low heel for comfort. For dressy occasions, a higher heel will dress up your look. Heel bruises can occur if you step on a stone or a pebble without much cushioning on the heel of your foot. Unlike athletic shoes or dress shoes, sandals don't typically

come with much padding in the heel, especially in cheap sandals. Always check the cushioning of potential sandals by pushing your thumb into the heel. If the area doesn't give when depressed, look for a different pair.

Price

Price is always a factor when shopping for sandals. Look for sales and discounts to find the best deals. Also, consider quality when choosing sandals. Paying a little more for higher-quality sandals that will last longer is often worth it.

5 important factors to consider when buying sandals

<https://ericjavits.com/blogs/news/factors-when-buying-sandals>

5 tips for buying the right sandals

<https://www.anklefootmd.com/5-tips-for-buying-the-right-sandals/>

Energy Drinks

Energy drinks are widely promoted as products that increase energy, enhance mental alertness, and strengthen physical performance. Next to multivitamins, energy drinks are the most popular dietary supplement consumed by American teens and young adults. Men between the ages of 18 and 34 consume the most energy drinks. Almost one-third of teens between ages 12 and 17 drink them regularly. Caffeine is a major ingredient of energy drink products. Energy drinks may also contain other ingredients such as guarana, sugars, taurine, ginseng, B vitamins, glucuronolactone, yohimbe, carnitine, and bitter orange.

Caffeine

- Most energy drinks pack a serious caffeine punch. Caffeine is a central nervous system stimulant. It gives you energy and makes you more alert. The average 8-ounce cup of coffee contains about 95–200 milligrams of caffeine, according to the Mayo Clinic. In comparison, a 2-ounce 5-Hour Energy shot contains about the same amount of caffeine (200–207 mg).

Sweeteners and Stimulants

- Usually there are other stimulants besides caffeine in energy drinks. Additives such as guarana and ginseng are common. These can amplify the drink's energy boost and the adverse effects of caffeine. Energy drinks often contain large amounts of sugar to aid their energy-boosting effects. A single serving of an energy drink can have more than 30 grams of sugar. When picking an energy drink, be sure to look at the sugar content. If the company uses alternative sweeteners instead of sugar, be sure to check what type of sweetener is being used.

Calories & Carbohydrates

- Most sports/energy drinks contain 45-160 calories per serving. Sports/energy drinks should offer significant amounts of carbohydrates.

Ingredients found in different energy drinks

- Carnitine: improves endurance, increases fat metabolism, and protects against cardiovascular disease.
- Glucuronolactone: promotes excretion of toxins and protects against cancer.
- Guarana: increases energy, enhances physical performance, and promotes weight loss.
- Inositol: decreases cholesterol levels, lowering risk of cardiovascular disease.
- Panax Ginseng: speeds illness recovery, improves mental and physical performance, controls blood glucose, and lowers blood pressure.
- Taurine: lowers risk of diabetes, epilepsy, and high blood pressure.

MyPlate Food Groups

One place to start is to look at your MyPlate food groups. The best meals will have ingredients from multiple food groups. This will provide a wider range of vitamins and minerals while helping to keep you satisfied. Whole grains, fruits, and low-fat dairy are going to be the most common healthy foods found in breakfast cereals.

Grains: provide carbohydrates (which give us energy), fiber, B vitamins, and the essential mineral iron. Whole grains, (oats, popcorn, brown rice, and whole wheat), are healthier choices than refined grains (enriched white flour, corn meal, and white rice) because whole grains provide more fiber, vitamins, and minerals.

Fruits: provide fiber and healthy natural sugars.

Calories: Consider the calories in the portion size you plan to eat. While calories are not the only piece of nutrition information you should consider when choosing a meal, they can help guide you in making the best choice.

Carbohydrates: Under normal, healthy conditions, carbohydrates are our bodies' primary source of energy. It's important to get carbohydrates from your food, but some sources of carbohydrates (like whole grains) provide more nutrients than others. Look on the nutrition label to see how much total carbohydrate, sugar, and fiber a cereal contains.

Fiber: Carbohydrates from fiber are beneficial to your health by causing you to feel full for longer and helping with digestion. Eating enough fiber can also reduce your risk for heart disease and some cancers. Look for meals with more fiber.

Sugars: Sugar is a carbohydrate that is present in naturally sweet foods, like fruits and dairy products, but can be added to foods as well to make them taste sweeter. Natural sugar found in foods like fresh fruit and low-fat dairy are a good choice because they provide energy from the natural sugar and bring vitamins, minerals, and/or fiber along with it. However, sugar that is added to a food to sweeten it provides energy with few or no nutrients and no fiber. This is called "added sugar." Even healthier foods can have sugar added to them, like sweetened sauces.

On the nutrition facts label, sugars are listed under carbohydrates. On some labels, you may also see "added sugar" listed underneath sugar. Even when added sugar isn't listed on the nutrition facts label, you can find out if a product has added sugar by looking at the ingredient list for sugar or other names such as dextrose, fructose, brown rice syrup, cane syrup, corn syrup, and cane juice. Although some of these might sound healthier, like honey or brown rice syrup, they are all basically the same to your body— sources of added sugar that we want to limit in the foods we eat.

Low and no calorie sweeteners: There are several low and no calorie sweeteners that can be used to sweeten foods with fewer calories than sugar. Some common examples are aspartame, saccharin, sucralose, stevia, and acesulfame potassium. While research tells us these are generally safe, we do not know much about the long-term health consequences for children and teens. So, when considering foods you might eat often, it's probably best to choose meals without low and no calorie sweeteners.

Fat: Our bodies need fat to provide energy and carry nutrients. Some types of fat are better for our health than others. Monosaturated fats and polyunsaturated fats are beneficial for our heart and

brain health. Nuts and seeds (like almonds, peanuts, pecans, and hazelnuts) are good sources of unsaturated, healthy fats. So are oils from plant ingredients, like sunflower, corn, soybean, and flaxseed oils. (Fish and avocados are also great sources of healthy fats, but you're unlikely to find these in your breakfast cereal!)

Saturated and trans fat are bad for your heart health. The United States Department of Agriculture (USDA) recommends that you limit saturated fat to less than 10% of daily calories and avoid trans fat. If you look at the ingredient list, you do NOT want to find "partially hydrogenated oils" listed, as these are sources of trans fat.

Protein: Protein does so many things in your body, but it is best known for helping you build muscle. Protein also helps you feel full for longer. It is important to get protein in each of your meals because it keeps you full and helps ensure you get enough protein throughout the day. In general, choose meals with more protein.

Vitamins and Minerals: Vitamins and minerals are listed on nutrition labels as a percent daily value (%DV). The goal is to get 100% of the DV of each vitamin and mineral from foods each day. Nutrition labels have changed; some packages will have an older version while most will have the new version. The new version will tell you how much iron, calcium, potassium, and vitamin D are in the food. The old version will tell you how much iron, calcium, vitamin A and vitamin C are in a food. It is best to make your decision based on the nutrients that are listed on all choices.

Salt: Our bodies need sodium (salt) to function, but getting too much salt leads to high blood pressure and is harmful to your health. The 2020 Dietary Guidelines for Americans and MyPlate recommend that you consume no more than 2,300 milligrams (mg) of sodium per day. Be sure to check the nutrition facts label and choose meals that are lower in sodium.

Overall, it is best to make your decision based on the MyPlate food groups and nutrients that are listed on all choices (like calories, saturated fat, protein, fiber, sodium, and sugars).

The food label, or the nutrition facts panel, tells you what your food is made of. This can help you make informed decisions about how to eat a balanced diet.

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
	% Daily Value*
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Servings per container tells you how many servings are in the whole package

Serving size tells you how much of this food people normally eat. It is the basis of the nutrient and calorie amounts.

This column tells you what nutrients are in this food and how much.

The "Calories" line tells you how much energy (or Calories) you get from eating one serving of this food. (The amount in one serving is listed above.)

This column shows you what percent of your daily needs of each nutrient this food will fill. It is based on a 2000 Calorie diet.

The point of the food label is to let you know what is in your food and to list the ingredients it is made from. The Daily Values % are a guide for people to follow to build a healthy diet. You want to get 100% of your Daily Value in nutrients like vitamins, minerals, and fiber. You also want to stay under 100% in other nutrients like sodium, saturated fat, trans fats, and cholesterol.

5% is low – aim low for sodium, saturated fat, trans fat, and cholesterol

20% is high – aim high in vitamins, minerals and fiber.

The Daily Value % are based on a 2000 calorie diet. Not everyone needs exactly 2000 calories in a day. Some people need more and some people need less. That doesn't mean the Daily Value % can't be useful to you. They are still a good guide to know what foods are good sources of nutrients, and which foods to enjoy in smaller amounts. You can also use the %DV to compare foods.

Sources

MyPlate. United States Department of Agriculture.

<https://www.myplate.gov/eat-healthy/what-is-myplate>

How to Understand and Use the Nutrition Facts Label. Food and Drug Administration.

<https://www.fda.gov/food/new-nutrition-facts-label/how-understand-and-use-nutrition-facts-label>

Energy Drinks: National Center for Complementary and Integrative Health

<https://www.nccih.nih.gov/health/energy-drinks>

Healthy Energy Drinks: Is there such a thing?

<https://www.healthline.com/health/energy-drinks-healthy-alternatives>

Fitness Equipment

Your personal health can be positively impacted by including physical activity into your regular routine. It can improve not only your physical health, but also other facets of living a healthy life. “Regular physical activity can improve your brain health, help manage weight, reduce the risk of disease, strengthen bones and muscles, and improve your ability to do everyday activities,” according to the Centers for Disease Control (CDC).

According to the National Institute of Health, there are four basic types of exercise that can improve both health and physical activity. Each of them has different benefits and using multiple types can magnify the benefits regardless of age.

Types include:

Endurance: the purpose of this activity is to increase your breathing and heart rate. It is often referred to as “aerobic” or “cardiovascular (cardio).” Walking, cycling, swimming, climbing, dancing, and running, and all endurance-building activities. There are a range of fitness equipment products that can be used for endurance.

Strength: muscle strength can help you become a better athlete, increase work productivity, and make strenuous daily activities easier. It can also help you with balance. Equipment and products to help build strong muscles may include both “strength training” equipment and “resistance training” equipment. The CDC recommends two days of strength training per week.

Balance: this is an important part of physical fitness and focuses on the ability to maintain proper posture over the body’s base of support. Improved balance can prevent falls among the elderly, can increase the ability to generate power in a vertical jump athlete, and can serve as a method to increase the force or resistance placed upon the body to increase strength. There are a range of products on the market to help improve balance for all ages and purposes.

Flexibility: exercises that stretch muscles can greatly impact your body’s ability to stay flexible. Muscle flexibility allows greater freedom of movement for other exercises as well as for everyday activities. It may also help you avoid discomfort when confined to small spaces for extended periods of time like a meeting, classroom, plane flight, or even a car/bus ride. Equipment/products used to improve flexibility can be quite simple and inexpensive compared to other types of fitness equipment. However, the impact on your physical fitness can be quite dramatic over time.

There is a wide range of products available in this product category and there is an even wider range of uses for them. In addition, one should consider the physical ability of the user. Most of the equipment referenced in this guide can be used across ages and abilities. This product category includes the following types of fitness equipment but may also include others not listed or referenced here.

- Dumbbell Set
- Treadmill
- Stationary Bicycle
- Barbell Set
- Rowing Machine
- Elliptical Trainer
- Balance Trainer

Dumbbell Sets (good for – strength, balance, and flexibility)

Dumbbells are small bars that fit in your hand and have equal weights on either side. They weigh as little as 2 pounds and go up to over 100 pounds. They can range from simple small sets to very large extensive sets depending on their range of uses and the anticipated benefits from using them. Some are more appropriate for a single person's use in your home, while others may be more appropriate for multiple people to use at the same time in a gym setting.

- **Materials** – dumbbells can be made from a variety of materials including rubber, neoprene, urethane, steel, and cast iron. In addition, there may be some that include a combination of both like the rubber-coated cast iron products. There are advantages and disadvantages of each based on the type of use, space, and storage. The types of materials used can also be reflected in the cost. For example, the rubber coated hexagonal weights may be more expensive than the non-coated equivalent due to the extra materials used. In addition, rubber may be less likely to scuff or scar a delicate floor.
- **Types** – dumbbells come in three general types to include fixed, adjustable, or plate loadable. Fixed dumbbells have a single grip which is permanently fixed between to billets and cannot be altered. Adjustable dumbbells consist of a series of weight plates mounted in a base with a mechanical handle or dial that can be adjusted for a specific plate which in turn adjusts the amount of weight. The plate loadable is a varied type of dumbbell that includes a handle which can be loaded with varied weight plates and secured with a barbell collar. Depending on their intended purpose and use, one type may be more advantageous than another. For example, smaller sets of 2, 3 & 5 lb. weights may not be expandable within the set unlike the larger studio sets that may range from 5 to 50 pounds each.
- **Shapes** – dumbbells can be round/circular, hexagonal, square, or globe. Depending on how and where they will be used, the shape can impact which is preferential. For example, the hexagon-shaped dumbbells are less likely to roll away if they are set down on the floor, flat surface, or when storing. Circular dumbbells distribute their weight more uniformly compared to other shapes, and their ability to roll can be both an advantage and disadvantage.
- **Handles** – the handle is a very important feature of any dumbbell. Variations in grip thickness, shape, texture, and finish can make a big difference when selecting the best one for you. There are also some with revolving grips which allows the grip to spin separately from the dumbbell to avoid torque in the wrists when changing hand positions.

Treadmills (good for – endurance, strength, balance, and flexibility)

The treadmill is a stationary exercise machine that features a walking or running belt designed primarily for cardio exercise. However, they can be used for all types of exercise depending on the type and features of the individual model. Treadmills can offer a variety of speed and incline settings which is ideal for varied cardio fitness levels. Some models even offer Bluetooth connectivity for audio/visual and programming. Some have LCD touchscreens for interactive controls including streaming training programs. Treadmills can provide some unique advantages for their uses including:

- Offering cushioned running/walking surfaces for shock absorption, reducing high impact for runners which can lead to back, knee, and ankle problems over time
- Helps build a stronger heart and bones through low impact cardio, as well as reducing blood pressure and even helping with weight loss
- Building leg muscles and improving core strength
- Improves mental health through endorphins released through aerobic exercise

Treadmills can be grouped into 4 different types. Each may share similar features and benefits as well as have some features unique to each type. Since treadmills can be a very versatile piece of fitness equipment, evaluating the scope of its use is important when selecting the best one for your own use.

- **Manual** – these products are generally lighter and least expensive of all treadmill types. They generally offer fewer features than the others as they are not powered by an electric motor. The primary features include handrails and the treadmill belt. They are powered exclusively by the person walking or running. As a result, when you stop walking/running the treadmill stops as well. This is a much safer option at home if there are small children around. They are usually foldable making them much easier to store, and generally smaller and lighter than their motored counterparts.
- **Motorized** – these products require a main power source for the electric motor and other powered features like LCD displays, speakers, and streaming capabilities. Motorized treadmills are generally heavier than the manual versions but may be equipped with rollers to make moving them easier. The motorized belt and deck may have adjustable speeds and inclines for extended capabilities. Commercial versions may also be more appropriate for extended or heavy use and will likely be more expensive than the home-type models. However, they also work well at home despite the cost.
- **Hybrid** – these products are generally more expensive, and more durable compared to other models. Their hybrid designs can include “tread climber” that combine traditional designs with elliptical machines.
- **Medical** – these are very specialized machines but also have their place depending on its intended use. They are sometimes referred to as “zero gravity” or “anti-gravity” treadmills, allow the user to walk or run at a lower percent of their own body weight. This is especially valuable for preventative rehabilitation therapy. They function primarily like a standard, except as noted above.

Treadmill safety is very important especially for any version which will be at home and may be accessible to small children. Great care should be taken when selecting a treadmill. Ensure that it has important safety features, including emergency stop systems like a panic button, a tether with a shut-off clip, or both.

Stationary Bicycles (good for – endurance, strength, balance, and flexibility)

Stationary bicycles or “exercise bikes,” like treadmills, are a type of stationary fitness equipment that provides some of the same fitness benefits as cycling with some important benefits over being out on an open road. Aside from the cardiovascular benefits of this type of activity, stationary bicycles also help with weight loss, burning fat, strengthening legs and lower body muscles, and provides a low-impact workout. This equipment allows for interval training and is much safer than road cycling for obvious reasons.

A stationary bicycle’s most common and basic design includes a metal frame, single wheel, a seat, and some type of handlebar. From this point the variations begin and have great impact on its use and versatility. The addition of other features can include things like vital monitoring sensors, LCD screens, audio input ports, Bluetooth, and streaming program capabilities.

There are five general types of stationary bicycles: indoor cycling bikes, recumbent bikes, upright bikes, air bikes, and folding bikes. Each have their own unique characteristics and fitness benefits. Depending on your fitness goals, you should select the type and model that fit your needs best.

- **Indoor Bike** – this is likely the most common type of stationary bicycle. It includes the basic design with the handlebars positioned forward of the cycle (above the front wheel) to allow the rider to lean forward like being out on the open road. What makes this type unique is the exposed flywheel that uses friction or magnetic resistance to create different levels of intensity. The control is either a manual control (knob) or electronic control (digital). These models are great for high-intensity workouts and have a smaller footprint than some of the other types. You can even stand up on the pedals and ride in that position. One fault is that they generally provide no upper-body workout.
- **Recumbent Bike** – this type is unique in that it places the rider lower to the ground and repositions the pedals in front of the rider as opposed to directly below. As a result, this type is considered the lowest-impact type of bike. Unlike the indoor bike’s narrow seat, this one provides for not only a wider seat but includes a backrest as well putting the rider into an almost reclined position. People who might experience pain on a bike might be more comfortable with this type of bike. It may also be beneficial to someone with a disability. This bike gives up intensity for comfort and stability. There is no upper body movement or hand movement with these models making it less versatile.
- **Upright Bike** – this model is like the indoor bike with one major difference. The handles are closer to the rider with the intent of keeping the rider from leaning forward at any point during the ride. For some, this position might be a bit uncomfortable for long rides. This also creates a more compact footprint than other types. In addition, the seat tends to be smaller than on the recumbent bike. This model does provide for a more robust and intense workout than the recumbent bike, but there are fewer choices in this type of bike on the market.
- **Air Bike** – while the indoor bike uses a flywheel, an air bike uses a fan to generate resistance while pedaling. The faster you pedal, the faster the fan turns and the more resistance you create. These models tend to be noisier than other models so if noise is an issue, this may not be the best choice. The pedals are located directly below the rider like the indoor bike and the seat size varies depending on the model chosen. One of the unique features of most air bikes are the moveable handles that add to an upper body workout. It works much like an elliptical where your upper body movement can in fact assist you with your lower body workout.
- **Folding Bike** – these models are designed with space as a priority. These are not your sturdiest designs but are functional and are great for small spaces. They are designed to be folded up and stored away easily. These models have the handlebars in front of you and the pedals below. Your ability to get an intense workout from these models is very unlikely, but they do provide a decent cardio workout. Many have low maximum weight capacities and generally do not come with any “extras.” This makes them very affordable.

Barbell Sets (good for – endurance, strength, balance, and flexibility)

A barbell set is a piece of fitness equipment that is generally purchased as a set. Individual pieces can be purchased and is primarily used for weight training to build strength. While it can be used to address other fitness benefits, relative to alternatives, this option is generally more expensive. A set includes a barbell, which is a long bar (4’ to 8’) designed to accept weight plates on either end to increase or decrease the total weight. Collars are used to prevent the plates from moving outward unevenly. By far it is one of the simplest pieces of fitness equipment in most gyms. However, it is much more complicated to learn how to use these correctly and effectively. In exchange, a barbell set for weight training requires using multiple muscle groups at once. This can

make complete workouts more efficient. In some cases, you can work your entire body with a single move and are great for budding athletes. The two basic components of barbell sets include the weight and the barbells (with collars).

- **Weights** – the plates of any barbell set are the most important consideration. Most sets are available with cast-iron or bumper plate styles. Your choice will influence how you set up your gym, how many can be stacked onto a barbell and other factors. Cast-iron plates are the most traditional options for a set. They can be thinner than coated plated which allows for stacking more on any given barbell. However, cast-iron can rust if exposed to moisture or damp basements/garages. They are also a bit noisier as they clank together during your workouts. Bumper plates are generally made from a rubber base and as a result can be thicker than cast-iron plates. This reduces the number that can be stacked on a barbell. These also tend to be a bit pricier than the cast-iron plates. As far as sets, they can range from as little as 65 lbs. to as high as 600 lbs. Unless you expect to be lifting that much, a mid-range set at 300-350 lbs. is a good place to start.
- **Barbells** – most sets include a standard or an Olympic barbell that is about 7’ to 8’ in length and weighs approximately 45 lbs. They have a “sleeve” on either end that holds the plates of weight secured by a collar. Each different type of barbell has different qualities and a special design that serve its specific purpose. In addition to varying in shape and size, they may also feature different amounts of knurling (grippy lining on the metal), amount of whip (the way the weight changes as the bar moves), and sleeves.
 - Standard Bar: 35-55 lbs., versatile lifts, static sleeves
 - Olympic Bar: 33-44 lbs., versatile lifts, spinning sleeves
 - Trap (Hex) Bar: 30-70 lbs., great for deadlifts, not very versatile
 - Swiss Bar: 35 lbs., good for those with limited shoulder mobility, holds less weight
 - Safety Squat Bar: 50 lbs., good for beginners, not very common
 - Curl Bar: 25-35 lbs., good for arm lifts, varied hand positions, limited to arm lifts
 - Cambered Bar: 85 lbs., good for lower body lifts, hard to find
 - Log Bar: 135 lbs., specialized lifting, good for very heavy weight, hard to find
 - Deadlift Bar: 45 lbs., flexes for deadlifts, deeper knurling, relatively expensive
 - Powerlift Bar: 45 lbs., stronger steel, great for heavy weights, not for beginner
- **Collars** – there are a range of different collars that fit on barbell sleeves to secure the weight plates. They include spring collars, spinlock (threaded) collars, lockjaw collars, and muscle clamp collars to name a few. When it comes to securing the weight plates, make sure your collar is designed for the sleeves on your bar to prevent the weight plates from moving.

As anyone could imagine, barbell sets take up much more space than other forms of fitness equipment. In addition, their size and total weight make storing them after each use impractical. Depending on the size of the set, it might include racks for the bar(s) and weight plates. That is a big consideration when choosing to add this to your home gym. Plenty of space is a must.

Rowing Machines (good for – endurance, strength, balance, and flexibility)

You do not have to be a rower to use and benefit from a rowing machine. Rowing machines provide a total-body workout. It is beneficial for all fitness levels. Its low-impact design is great for building up the heart and lungs as well as power and endurance. By using a total body approach, it is an efficient fitness product and is a great alternative to the treadmill or elliptical. The rhythmic motion can also be meditative. These products all have different features that are important in selecting the best one to suit your gym and fitness needs. Rowing machines can feature LCD displays, streaming workout capabilities, vital monitoring, different resistance systems, and a

variety of ergonomic designs. Some machines have a large footprint and can be much more challenging to store away after each use than others. Keep those things in mind when making your selections. They can also be on the pricier side of fitness equipment.

There are some general types of rowing machines on the market that may influence your decision to purchase one. The primary difference between these types is the system used to create the resistance that makes the workout different.

- **Hydraulic Rowers** – these rowers use a piston attached to the frame and the seat/bars. While these tend to be the smaller, more affordable of rowers, they provide less of a full-body workout due to the rigid rowing action of the piston. The resistance on these models does not change.
- **Air Rowers** – the resistance system on these models uses a flywheel that sucks air in. The faster/harder you row creates the resistance needed for a great workout. Some models include a “damper” to adjust the amount of air to increase/decrease the tension of each stroke. These are most popular models because they have virtually unlimited resistance for any amount of strength. They have a smooth natural feel but can be quite loud. The harder/faster you pull, the greater the resistance.
- **Magnetic Rowers** – like the air rowers, these models use a flywheel for resistance. However, instead of air they use a magnetic break. The resistance is constant. If you want to change the level of resistance, you must stop, adjust, then resume the rowing. This may not be ideal if you plan on a session with varied levels of resistance without interruption. These models tend to be a little smaller and are quieter than others.
- **Water Rowers** – these rowers give the most realistic feel to rowing as they use water to create resistance. The faster you row, the more resistance you get. However, to increase the overall resistance, you must add more water to the tank. These are more expensive than other models and are larger. In addition, the water must be changed periodically.

Size, storage, noise, and usability are all important things to consider when purchasing a rowing machine. Knowing the different types of resistance and the advantages and limitations of each choice are crucial to making the best purchase of rowing machines to suit your needs.

Elliptical Trainer (good for – endurance, balance, and flexibility)

Elliptical fitness machines are stationary units providing a great low-impact workout without the same movements as running on a treadmill, pedaling an exercise bike, walking, and climbing stairs. Also referred to as “cross trainers,” these machines are primarily used to improve cardiovascular capacity and to strengthen muscles with low risk of injury. Machines put the user in an upright standing position on pedals; they hold on to a static bar for support or can hold moving bars for greater versatility in their workout. Elliptical trainers can be great total-body workout machines. These too come with a variety of resistance systems and features to add to your workout through LCD screens, digital displays, programs, streaming programming capabilities, and other features. Like a stationary bike, ellipticals are smaller and easier to store than other larger forms of fitness equipment. When selecting the best model for your use, consider value, size, ergonomics, exercise intensity, connectivity, and programs. Like all other forms of fitness equipment, you should also consider any safety features. Consumer Rights differentiates between those with and without heart monitoring programs and groups ellipticals into three different types based on its configuration.

- **Front-Drive Ellipticals** – the location of the flywheel is in the front of the machine and can provide greater vertical range of motion, like a stair climber. These usually have pedals

supported on wheels that glide on a track. Depending on the quality of the rollers, this can create noise. The pedals in this configuration are closer to the ground and easier to mount.

- **Center Drive Ellipticals** – these machines tend to be a little more compact taking up less floor space. The pedals are mounted on a driveshaft that more closely mimics walking or jogging with a circular motion.
- **Rear-Drive Ellipticals** – with a smaller rear-mounted drive wheel, this machine can have a track-and-roller setup for the pedals. These models can often allow the user to tilt forward to provide an incline to your workout. As a result, they are a bit longer in their design and footprint. The ride on this machine can be very smooth and quiet.

The added features of ellipticals may be just as valuable to the other user as the type of configuration. The level of resistance, monitoring heart rates, and adjusting workouts play a very important part in deciding which model to purchase. Due to a limited amount of resistance on these machines, they are not ideal to build strength. However, they are excellent machines for other fitness benefits.

Balance Trainers

This group of products is extremely broad in terms of design. Improving your balance is fundamental for living a healthy and active life. While balance for younger people may be less of a struggle, this can be a crucial aspect for older adults that may lose their natural balance and stability. Anyone can improve their balance with a little bit of helpful equipment. The goal of balance equipment is to create instability in the body, forcing your muscles and body to adapt. However, doing this safely is of the utmost importance. Remember, you are intentionally creating instability, so proceed with caution. Doing so helps strengthen key muscles to regain balance and improve overall stability. Below are a few examples of balance trainers that provide a range of benefits for balance and stability.

- **Balance Ball** – this is a soft, inflated elastic ball that can be extremely versatile in its application. Some designs include a full sphere/ball while others may be a half-ball mounted on a flat rigid platform. A key consideration when purchasing a balance ball should include the size and thickness of the material. You should also consider the weight limitations and the types of exercises that you will be doing. This one is not for beginners.
- **Balance Pad** – These are great for rehabilitation and for those recovering from injuries. They are easy to use and less unstable than a balance ball. They are generally pads made of foam with a uniform thickness.
- **Balance Board** – although they may come in different shapes and sizes, their movement is either multidirectional or bi-directional. Larger designs allow for wider stance, making it easier to balance. They are designed to rock, roll, or wobble. Although primarily designed for standing on them, they can be used for other exercises where an unstable platform may help build stability and strength. Some designs include a platform that rolls/floats on a separate roller.
- **Exercise Step** – with a wide range of designs, the exercise step is a simple but highly effective piece of fitness equipment. Stepping up and down and holding leg positions can dramatically improve balance. This product has value for those with very basic skills all the way to those requiring more advanced balance skill. These can vary in shape, length, width and height.

Materials and construction are important variable in design and function. Wood, rubber, plastic, foam, and metal construction can affect weight capacity, durability, cost, and versatility.

Remember, the possibility of injury is crucial based on the intended use and the intended user. Use of some devices on carpet versus hard flat surfaces can change the risk factor. Also, appropriate footwear when using them can dramatically affect the safety of the product. Always use proper footwear to avoid slipping. Products that can be used for balance are not limited to those referenced here, so understanding the nature of the product and its intended purpose and user are more important than the product itself.

Before you begin a fitness program using any type of fitness equipment, it is important that you visit with your doctor to be sure that your choices will not cause any unintended injury. This is true for the young, old, novice, or experienced fitness enthusiast. Fitness equipment can have great benefit in creating a fitness regimen that improves your overall endurance, strength, balance, and flexibility.

Resources

Benefits of physical activity

<https://www.cdc.gov/physicalactivity/basics/pa-health/index.htm#print>

Four types of exercise can improve your health and physical ability

<https://www.nia.nih.gov/health/four-types-exercise-can-improve-your-health-and-physical-ability>

Flexibility exercise

<https://www.heart.org/en/healthy-living/fitness/fitness-basics/flexibility-exercise-stretching>

Elliptical buying guide

<https://www.consumerreports.org/health/ellipticals/buying-guide/>

Food Delivery Service

From innovative start-up concept to billion-dollar industry, meal-kit delivery subscription services are an increasingly popular option for those looking to reduce the stress of home meal preparation. First introduced to the U.S. in 2012, there are now more than 150 meal-kit delivery subscriptions for American consumers to choose from.

WHAT IS A MEAL DELIVERY SUBSCRIPTION?

A meal delivery subscription is a food subscription service. The consumer places an order and meal are delivered directly to their door.

CHOOSING THE BEST OPTION

When choosing the best meal delivery service, there are several things to consider before making the final decision.

- **EASE OF ENROLLMENT:** Is online enrollment quick and easy? Is the website easy to navigate?
- **SUBSCRIPTION REQUIREMENTS:** How many meals do you have to order and how often – weekly or monthly?
- **DELIVERY:** How much is the delivery fee? Most services charge delivery but some include it with a certain purchase amount.
- **FLEXIBILITY:** Can you skip a week or pause your subscription easily? Can this be done via website or app, or do you have to call or email? Can you cancel at any time? What are the service's terms?
- **NUTRITION:** Is nutrition information readily available and easy to locate? Does it offer variety for those with dietary restrictions or preferences?
- **CUSTOMER SERVICE:** Is it easy to contact customer service? Is there a FAQ section?

Food Delivery apps have become increasingly popular offering convenience and accessibility to various cuisines. Examples of popular food delivery apps include Uber Eats, Door Dash, Grubhub, and Postmates.

Factors to consider when selecting an app:

User reviews and ratings:

- Check the app's reviews and ratings on app stores or review websites to gauge customer satisfaction.
- Look for apps with higher ratings and positive feedback from user.

App features for food safety:

- Ensure the app provides transparent information about food safety practices, such as proper handling and packaging.
- Look for features like real-time order tracking, which can help ensure your food's freshness and timely delivery.

Partnerships with reputable restaurants:

- Consider apps that have partnerships with well-known and established restaurants. This indicates that the app has established relationships with reliable food providers, increasing the likelihood of quality and safe meals.

Delivery options and fees:

- Evaluate the app's delivery options, including the availability of different delivery services (e.g., standard, express).
- Compare delivery fees among different apps to find the most cost-effective option.
- Premium features such as subscriptions, faster delivery, cancellation fees, service fees, and smaller cart fees are other things to consider.

App user interface and ease of use:

- Consider apps that have a user-friendly interface and intuitive navigation.
- Look for features like saved preferences and order history, which can enhance the overall user experience.

Mobile Payment Systems

- Mobile payment systems such as PayPal, Google Pay or Apple Pay, enhance the convenience of the ordering process. The opportunity of having this pay experience contributes to higher conversion rates.

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Carry On Luggage

Heading on a trip? Looking to purchase luggage that meets all airline guidelines? There are lots of items to choose from. With high demands on luggage comes higher competition, which means innovation, creativity and lots of choices. To ensure that you get from point A to point B smoothly, choosing the best carry-on luggage will make travel less stressful. Be prepared by knowing the airline guidelines and be knowledgeable of available options.

Carry-on bags are convenient for air travel because it the passenger to avoid the cost and hassle of checking a bag. The golden rule is that the bag must either fit under the seat or in the overhead bin. For domestic flights, your carry-on can be no larger than 22 inches high by 14 inches wide by 9 inches deep. (The maximum linear size is 45 inches, but none of the dimensions can exceed the measurements above.)

Measure the height of your luggage from the floor to the top of the handle in its lowered position. Even rule-abiding luggage is not a guarantee that your bags will not be relegated to the plane's underbelly; the flight crew can impose further restrictions even after boarding has begun. Most airlines do not have a weight limit for carry-on luggage. If they do, most do not actually weigh carry-on bags. The exception is for small commuter planes.

Personal item bags must fit underneath the seat in front of you on the plane. This type of bag can include a backpack, laptop bag, tote bag, brief case or camera bag. To get the most out of your personal item, it is beneficial to buy a bag specifically for this purpose. For U.S. domestic flights, the measurement rules range starting from 18 X 8 X 14 inches, but there is no standard size for these bags. The size also varies based on the location of the seat on the same aircraft. A growing number of airlines offer a lowest-class base-price that only include one personal item. A few items that are important when looking to purchase a personal item bag for air travel include durability, organization, and multiple carrying options.

When purchasing a new carry-on or personal item, it would be beneficial to look at one of the sites that includes the sizes and limits for multiple airlines. One such site is:

<https://smartertravel.com/personal-item-vs-carry-on/>

Comparing Transportation Security Administration (TSA) vs. the Airlines

The airline will determine how large or heavy bags may be to be able to board a flight. TSA does not enforce any rules regarding luggage size and weight; therefore, just because it makes it through security does not mean it will make it on the plane. The job of TSA is to screen the contents of the luggage, not to approve or reject the luggage itself. All checked bags are subject to screening and the TSA agent may be required to cut off any non-TSA approved locks. TSA has collaborated with many companies to make travel locks that can be opened by a TSA master key. At TSA security check points, passengers are required to remove any electronic device larger than a cellphone from their carry-on. TSA encourages travelers to pack their electronics in security-checkpoint

friendly bags or cases. These bags have dedicated compartments that hold laptops or tablets, which zip open to lay flat on the X-ray conveyor belt. These compartments do not have metal zippers or pocket that block the scanner's view of the items within.

The Anatomy of a Bag

Every bag comes with its own pros and cons. Take time prior to purchasing a bag to determine what your needs are and find the best travel bag that meets those needs.

Soft-Sided or Hard Sided

Soft-sided luggage is usually made of woven nylon fabric, such as Cordura or ballistic nylon. These are designed for maximum durability and are abrasion resistant. If you select a suitcase made from ripstop nylon, or "parachute material," make sure that it is a high-denier fabric, which means that it is thicker and more durable.

Pros: Lightweight and can conform into tight spaces

Cons: Not as protective as hard-sided suitcases and is vulnerable to ripping

Hard-Sided Luggage

Hard-sided luggage is made from high-tech plastics, such as ABS (acrylonitrile butadiene styrene) and polycarbonate, which are lightweight and durable. ABS is lighter of the two, but polycarbonate is more durable. Hard-sided luggage is usually designed like a clamshell, which features 50/50 split, allowing you to pack an equal amount on each side.

Pros: protect breakable contents and can be stacked

Cons: scratch and scuff easily; no outside pockets

Pro/con: limited amount of space; helps avoid overpacking

Wheels or No Wheels?

No Wheels

There are a few occasions where "no wheels" luggage proves to be the best choice.

Pros: ensures maximum interior space when traveling to location where wheels might have difficulty due to uneven surfaces

Cons: can be heavy and burdensome to carry

Two-wheel luggage

These are called "rollers" since they utilize the same type of wheels that are found on in-line skates. They only roll forward and backward, not side-to-side. This requires the suitcase to be rolled behind you as you pull it.

Pros: wheels are recessed, which protects them - two wheelers are better for clearing curbs.

Cons: can be hard to drag a two-wheeled bag in a crowded space. Recessed wheels take up interior storage space.

Four-Wheel Luggage

These have wheels that swivel 360 degrees and are known as “spinners.” They can either be pushed or pulled.

Pros: easy to navigate in tight spaces. Large or heavy suitcases are easier to manage on four wheels and are ergonomically better for shoulders when maneuvering them.

Cons: external mounted wheels are more likely to break off. According to experts, the wheels attached with screws are more secure than those with rivets. Carry-ons with spinners may have less room inside since the maximum allowable dimensions include the wheels.

Zipper

There are two types of zippers: chain and coil. The chain zipper, which slides on two sets of interlocking teeth, can be made of metal or plastic. A chain zipper is much stronger than a coil zipper, which has slides on two parallel coils that is usually made of polyester. A “YKKK” zipper is widely believed in the industry to be the most reliable zipper on the market.

Handles

For maximum comfort, look for an adjustable-length and soft-grip handle. Many travelers use the two-post handle system because of its ability to piggyback a smaller bag.

Compartments

The number, size, and configuration of compartments can be an important consideration.

Weight

Consider the weight of your empty suitcase. For airline travel, most of the weight you lug around should be your belonging and not the bag.

Smart Features

Luggage now includes built-in electronics to help you stay connected. Some of the new “connect” suitcases help you know where it is and how much it weighs. An owner can control who can access the luggage by virtue of the tracking functions having digital locks and fingerprint recognition. (Federal airline safety rules prohibit lithium-ion batteries in checked bags, so you need to look for a bag that has the option to remove them or “pop out” batteries. Pack the batteries in your carry-on with the terminal contacts covered to prevent short circuits.)

Locks

For domestic travel within the United States, luggage locks must be TSA-compliant, which means that security agents can use a universal master key to open your lock without breaking it. If you are buying an aftermarket lock, check the packaging to see if it is TSA-compliant.

Shopping Tips

Measure it yourself

Measure the dimensions yourself and make sure that they account for all parts of the bag, including wheels, outer pouches, and handles. Do not trust the labels or tags that proclaim, “official carry-on size luggage.”

Check the interior capacity

Many manufacturers do not disclose the interior volume. Look for features that maximize the interior space if that is what you need.

- Squared edges vs. curved corners
- Integrated outer compartments
- No wheels or handles (this opens every inch of interior space)

Warranty

If you want to keep your bag for a long time, get one with a manufacturer’s warranty. A lifetime warranty to repair or replace the bag is, of course, the best option.

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