

Example: Recommending trending products in a category (strategy)

This example shows you how to create a [recommendation](#) for products currently trending in a product category. The example uses a recommendation strategy to generate the [recommendation data](#). The example covers the entire development workflow from creating and testing the strategy to creating the modification that displays the recommendation.

In this example, you:

- Create a [recommendation strategy](#) for the top 10 trending products in a given product category. The trending products comprise the top 5 most viewed and top 5 most purchased products in the category in the past 24 hours.
- Create a customizable [template](#) for a product recommendation slider. The template uses the `frosmo.easy.strategies.fetch()` function for retrieving the recommendation data generated from the recommendation strategy. The function shuffles the product order.
- Create a [modification](#) and associated [placement](#) for displaying the recommendation on product category pages. The modification uses the recommendation slider template for its content.

You create all the components of the recommendation in the Frosmo Control Panel.

The following figure shows an example of the final recommendation on a product category page.

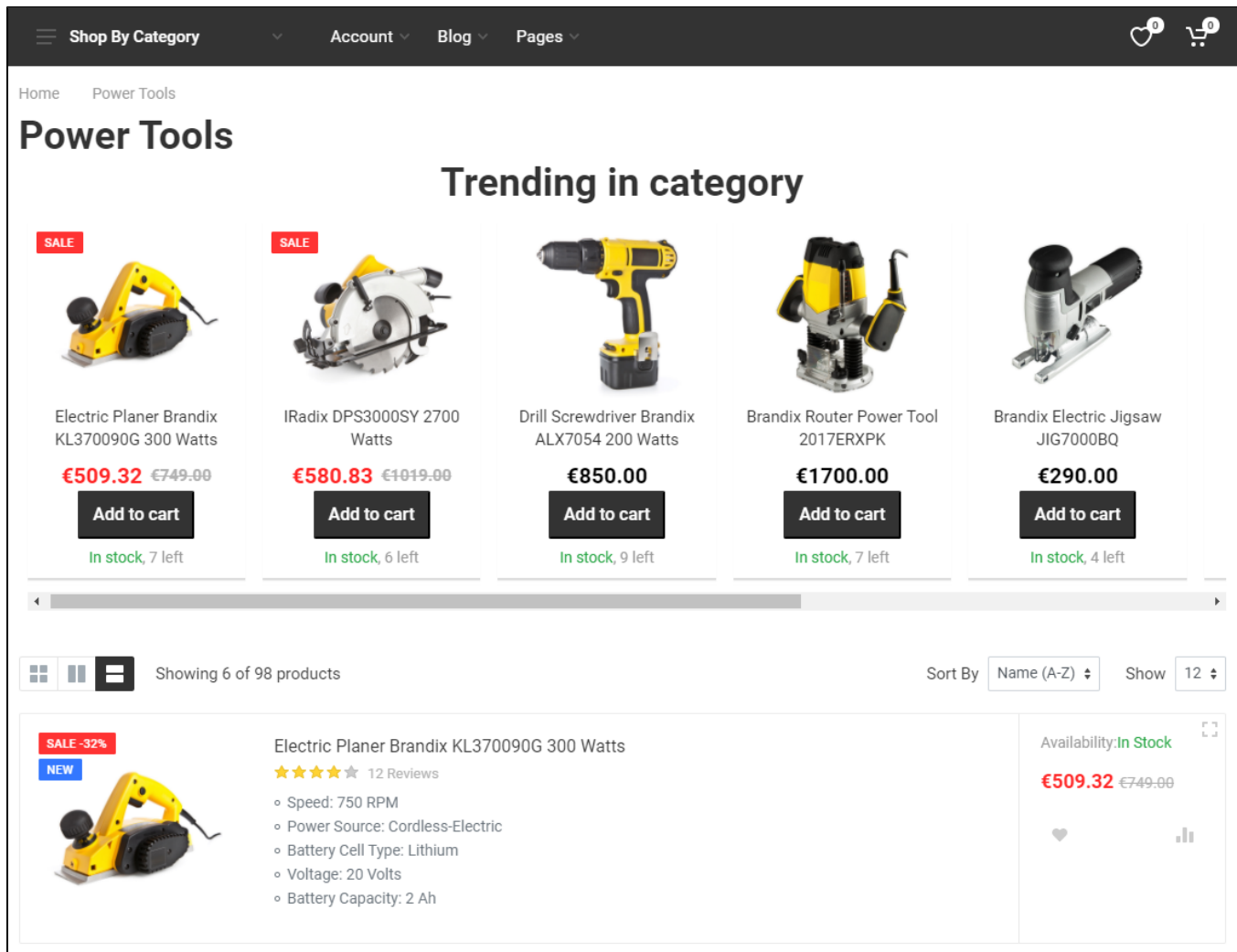


Figure: Product category page with a recommendation for trending products (click to enlarge)



For generating the recommendation, this example relies on [product data](#) and [transaction data](#) collected from the site. The example therefore assumes that product and transaction tracking are correctly set up on the site. Moreover, the example assumes that the product tracking stores category information in the `type` attribute of a product.



If you're trying out this example on a production site, but do not want the example to interfere with production content, use either [test mode](#) or a [workspace](#) in creating the example. You can also safely [preview the modification](#) from the Control Panel.

To create the recommendation:

1. [Create and test the recommendation strategy.](#)
2. [Create the recommendation slider template.](#)
3. [Create the modification and associated placement for displaying the recommendation on product category pages.](#)

Creating and testing the recommendation strategy

The recommendation strategy returns up to 5 products most often viewed and up to 5 products most often purchased in a given category in the past 24 hours.

To create and test the recommendation strategy:

1. In the Control Panel, select **Data Management > Recommendations > Strategies**.
2. Click **Create recommendation strategy**.
3. Define the following settings:
 - **Name:** Enter "Trending in category". Note that the ID automatically completes to "trending-in-category".
 - **Page type:** Select **category**.
 - **Algorithms:** Select the following algorithms (in order):
 - **Most viewed on the site in the past 24 hours, 5 items**
 - **Most bought on the site in the past 24 hours, 5 items**
 - **Filters:** Select **Only return items whose type matches the viewed category**. This limits the recommended products to the category currently viewed by the visitor.
 - **Affinity:** Feel free to set the slider to any level you want. The higher the level, the more each visitor's [affinities](#), if known, drive the recommendation results they get.

The following figure shows the complete recommendation strategy in the Control Panel. Click the figure to view a larger version.

Name *
Trending in category

ID *
The ID is automatically generated based on the name. You can edit the ID when you create a new strategy, but only until you save the strategy for the first time. [Learn more](#)
trending-in-category

Description

Page type *
Select the type of page on which the recommendation is displayed. [Learn more](#)
category

Fixed items
Define items that are always displayed in the recommendation. The algorithms, filters, and shuffling do not apply to these items. [Learn more](#)
Add item

Algorithms
Select the algorithms for the strategy, and set the number of items returned by each algorithm. [Learn more](#)

Most viewed on the site in the past : 5 items

Most bought on the site in the past : 5 items

Add algorithm


Filters
Create filters to further refine the set of items returned by the strategy. [Learn more](#)

Only return items whose **type** matches the viewed category

Only return items whose **categories** include the viewed category

Add filter

Affinity
Set the level of visitor affinity applied to the recommendation. The higher the level, the more personalized the set of recommended items is for each visitor. [Learn more](#)

No affinity applied  Full affinity applied

For more information about the settings, see [Creating and editing a recommendation strategy](#).

4. Click **Save**. The Frosmo Platform generates the recommendation data for the new strategy. The data generation may take a while.
5. Test the strategy by previewing the products it returns:
 - a. In the **Preview** section, in the empty field, enter the name of a category whose recommended products you want to preview. The name must be the exact full name tracked for the category by the platform.
 - b. Click **Show**. The preview displays the recommended products in slot order, that is, in the order in which the items are recommended to visitors. The preview also displays selected information, such as ID and name, for each product.

You have created and tested the recommendation strategy. You can now use its recommendation data in a modification.

Creating the recommendation slider template

The template creates a simple product recommendation slider. The template provides variation content options for defining the slider title, selecting the recommendation strategy to use, and selecting the maximum number of products to display in the slider. The template uses content prerendering to fetch and process the recommendation data before building and rendering the final slider element.

Number of products to recommend

Recommendation title

Trending in category

Product Name	Power Rating	Current Price	Original Price	Stock Status
Electric Planer Brandix KL370090G	300 Watts	€509.32	€749.00	In stock, 7 left
IRadix DPS3000SY	2700 Watts	€580.83	€1019.00	In stock, 6 left
Drill Screwdriver Brandix ALX7054	200 Watts	€850.00		In stock, 9 left
Brandix Router Power Tool 2017ERXPK		€1700.00		In stock, 7 left
Brandix Electric Jigsaw JIG7000BQ		€290.00		In stock, 4 left

Figure: Customizable visual parts of the recommendation slider (click to enlarge)

To create the recommendation slider template:

1. In the Control Panel, select **Modifications > Templates**.
2. Click **Create template**.
3. Define the following settings:
 - **Name:** Enter "Product recommendation slider".
 - **Export content:** Leave this field to **Automatic**.
 - **Content:** Enter the following content for the template.

Content for the template

```
<!-- HTML content of the modification -->
<div class="container">
  <h1 class="reco-title">{{title}}</h1>
  <div class="reco-slider">
    <div class="reco-slider-products">
      {{#products}}
        <div class="reco-slider-product-container">
          <a class="product" href="{{attributes.url}}" data-product-id="{{id}}">
            
            <div class="product-name">{{name}}</div>
            <div class="product-price">{{attributes.price}} €</div>
          </a>
        </div>
      {{/products}}
    </div>
  </div>
</div>

<!-- CSS for styling the HTML content of the modification -->
<style>
  .reco-title {
    text-align: center;
  }

  .reco-slider {
    display: flex;
    flex-direction: column;
    margin-bottom: 20px;
    width: 100%;
    max-width: 100vw;
  }
</style>
```

```
.reco-slider > * {
  box-sizing: border-box;
}

.reco-slider-products {
  display: flex;
  overflow-x: scroll;
  /* Scroll snap for browsers that support it */
  scroll-snap-type: x mandatory;
  /* Use momentum-based scrolling on wekbit */
  -webkit-overflow-scrolling: touch;
}

.product {
  display: flex;
  flex-direction: column;
  /* Product card spacing */
  margin: 0.5em;
  /* Product card padding */
  padding: 0.5em;
  background-color: white;
  border: 0 none;
  border-bottom: 2px solid #dcdcdc;
  box-shadow: 0 1px 1px rgba(0,0,0,0.05);
  /* Scroll snap for browsers that support it */
  scroll-snap-align: start;
}

.product-image {
  align-self: center;
  object-fit: contain;
  width: 100%;
  max-width: 100%;
  min-height: 10em;
  max-height: 10em;
  padding-bottom: 0.5em;
}

.product-name {
  /* Webkit ellipsis (...) */
  display: -webkit-box;
  -webkit-line-clamp: 2;
  -webkit-box-orient: vertical;
  min-height: 2.8em;
  max-height: 2.8em;
  overflow: hidden;
  color: #303030;
  font-weight: bold;
  line-height: 1.4em;
  text-align: center;
}

.product-price {
  color: #7a7a7a;
  font-weight: bold;
  font-size: 20px;
  line-height: 1.4em;
  text-align: center;
}

/* Responsive container */

.reco-slider-product-container {
  /* Leave 3rd item as teaser */
  min-width: 45%;
  max-width: 45%; /* Force size even if 1 item */
}

@media (min-width: 700px) {
  .reco-slider-product-container {
    /* Leave 4th item as teaser */
  }
}
```

```
        min-width: 32%;
        max-width: 32%;
    }
}

@media (min-width: 850px) {
    .reco-slider-product-container {
        /* Leave 5th item as teaser */
        min-width: 23.5%;
        max-width: 23.5%;
    }
}

@media (min-width: 1024px) {
    .reco-slider-product-container {
        /* Leave 6th item as teaser */
        min-width: 19.5%;
        max-width: 19.5%;
    }
}
</style>
```

The content defines the HTML and CSS code for the recommendation slider. The content includes multiple [Mustache tags](#), which need to be replaced with specific values in the final rendered content.

Feel free to edit the content to adapt the slider to your site's layout and style.

- **Content prerenderer:** Enter the following content prerenderer for the template.

Content prerenderer for the template

```
/**
 * Get the recommendation data, and render the recommendation with that data.
 * @returns {void}
 */
function createRecommendation() {
  // Get the recommendation strategy selected in the modification variation.
  var strategy = templateInstance.options.strategy;
  // Get the latest recommendation data generated with the selected strategy. Shuffle the
  results.
  frosmo.easy.strategies.fetch(strategy, {shuffle: true})
  // Extract the recommendation data from the response, and render the recommendation with
  the data.
  .then(function (response) {
    var data = response.data;
    renderRecommendation(data);
  })
  .catch(function (error) {
    console.error(error);
  });
}

/**
 * Render the recommendation.
 * @param {string} data Recommendation data to render
 * @returns {void}
 */
function renderRecommendation(data) {
  // Build the content options for the template renderer.
  // Restrict the number of products based on "numberOfProducts".
  var options = {
    title: templateInstance.options.title,
    products: data.slice(0, templateInstance.options.numberOfProducts)
  };

  // Render the template content with the content options.
  templateInstance.render(options);
}

createRecommendation();
```

The content prerenderer:

- Fetches the recommendation data by calling the `frosmo.easy.strategies.fetch()` function. The first parameter of the function is the ID of the recommendation strategy to use, which the prerenderer gets from the `strategy` content option. The second parameter instructs the strategy to shuffle its results. For more information about the function, see [Retrieving recommendation data for strategies](#).
 - Builds the final content options with which to render the template content. These are the values for the Mustache tags in the content. The values include the recommendation title, which comes from the `title` content option set in the modification variation, and the final set of recommended products, which the prerenderer extracts from the recommendation data based on the `numberOfProducts` content option set in the modification variation.
 - Renders the template content with the final content options.
- Content options schema:** Enter the following content options schema for the template.

Content options schema for the template

```
{
  "type": "object",
  "title": "",
  "properties": {
    "title": {
      "type": "string",
      "title": "Recommendation title"
    },
    "strategy": {
      "type": "string",
      "title": "Recommendation strategy"
    },
    "numberOfProducts": {
      "type": "integer",
      "title": "Number of products to recommend",
      "default": 5,
      "minimum": 1,
      "maximum": 10
    }
  },
  "required": [
    "title",
    "strategy",
    "numberOfProducts"
  ]
}
```

The schema describes the following content options, which must be set in the content options UI of the modification variation:

- **Recommendation title** (`title`)
- **Recommendation strategy** (`strategy`)
- **Number of products to recommend** (`numberOfProducts`)

The template uses all three content options to create the final recommendation slider element. While the template content uses `title` as is, the content prerenderer uses `strategy` and `numberOfProducts` to produce the final set of recommended products with whose data the recommendation slider gets populated.

- **Content options UI schema:** To further customize the content options UI, enter the following content options UI schema for the template.

Content options UI schema for the template

```
{
  "title": {
    "ui:placeholder": "Enter a display title for the recommendation"
  },
  "strategy": {
    "ui:field": "RecommendationStrategySelector"
  }
}
```

The UI schema sets the **Recommendation strategy** field to be rendered as a `RecommendationStrategySelector` widget and defines a placeholder text for the **Recommendation title** field.

The following figure shows the complete template in the Control Panel. Click the figure to view a larger version.

Name*

Product recommendation slider

Description

Enter a description for the template

Export content

If you plan to use this template in a modification that has content preloading enabled, select when to export the template content to the custom script. The recommended option is **Automatic**. [Learn more](#)

Automatic ▾

The template content is currently not exported.

Content*

Enter the template content. Modification variations that use the template get rendered with this content. [Learn more](#)

```

1 <!-- HTML content of the modification -->
2 <div class="container">
3   <h1 class="reco-title">{{title}}</h1>
4   <div class="reco-slider">
5     <div class="reco-slider-products">
6       {{#products}}
7         <div class="reco-slider-product-container">
8           <a class="product" href="{{attributes.url}}" data-product
9             -id="{{id}}"
10            <img alt="{{name}}" class="product-image" src
11             ="{{attributes.image}}"/>
12           <div class="product-name">{{name}}</div>
13           <div class="product-price">{{attributes.price}} €</div>
14         </div>
15       </products>
16     </div>
  </div>

```

Content prerenderer

If the template content requires preprocessing before it can be rendered on a page, enter the JavaScript that implements the preprocessing. [Learn more](#)

```

1 /**
2  * Get the recommendation data and render the recommendation with that data.
3  * @returns (void)
4  */
5 function createRecommendation() {
6   // Get the recommendation strategy selected in the modification
7   // variation.
8   var strategy = templateInstance.options.strategy;
9   // Get the latest recommendation data generated with the selected
10  // strategy. Shuffle the results.
11  frosmo.easy.strategies.fetch(strategy, {shuffle: true})
12  // Extract the recommendation data from the response, and render the
13  // recommendation with the data.
14  .then(function (response) {
15    var data = response.data;
16    renderRecommendation(data);
17  })
18  .catch(function (error) {

```

Content options schema

If the template content must be customized or otherwise configured in a modification variation, define the appropriate content options as a JSON schema. [Learn more](#)

```

1 {
2   "type": "object",
3   "title": "",
4   "properties": {
5     "title": {
6       "type": "string",
7       "title": "Recommendation title"
8     },
9     "strategy": {
10      "type": "string",
11      "title": "Recommendation strategy"
12    },
13    "numberOfProducts": {
14      "type": "integer",
15      "title": "Number of products to recommend",
16      "default": 5,
17      "minimum": 1,
18      "maximum": 10
19    }
20  }

```

Content options UI schema

If you want to customize the content options UI, define a UI schema for it. [Learn more](#)

```

1 {
2   "title": {
3     "ui:placeholder": "Enter a display title for the recommendation"
4   },
5   "strategy": {
6     "ui:field": "RecommendationStrategySelector"
7   }
8 }

```

For more information about the settings, see [Creating and editing a template](#).

- Use the content options UI preview at the bottom of the editor to test that the content options schema and content options UI schema are correctly defined.

The preview is fully interactive, so any changes you make to the schemas are automatically reflected in the preview. You can also set the content options in the preview as you would in the actual content options UI, and you can see a preview of the JSON object generated based on the set values.

The following figure shows the content options UI preview for template.

Content options UI preview

The following is a live, interactive preview of the content options UI as rendered based on the content options schema and content options UI schema. Below the UI, is a preview of the JSON object generated from the values set in the UI.

Recommendation title*

Recommendation strategy*
Number of products to recommend*

```
{
  "numberOfProducts": 10,
  "title": "Trending in category",
  "strategy": "trending-in-category"
}
```

5. Click **Save**.

You have created the template. You can now use the template in a modification to display the template content.

Displaying the recommendation

When a visitor navigates to a product category page, they see a recommendation for up to 10 trending products in that category.

For example purposes, let's assume that a product category page can be identified by `/category/` in the page URL, and that the page header is contained in a `<div class="page-header">` element. You'll place the recommendation slider below the header on every category page.

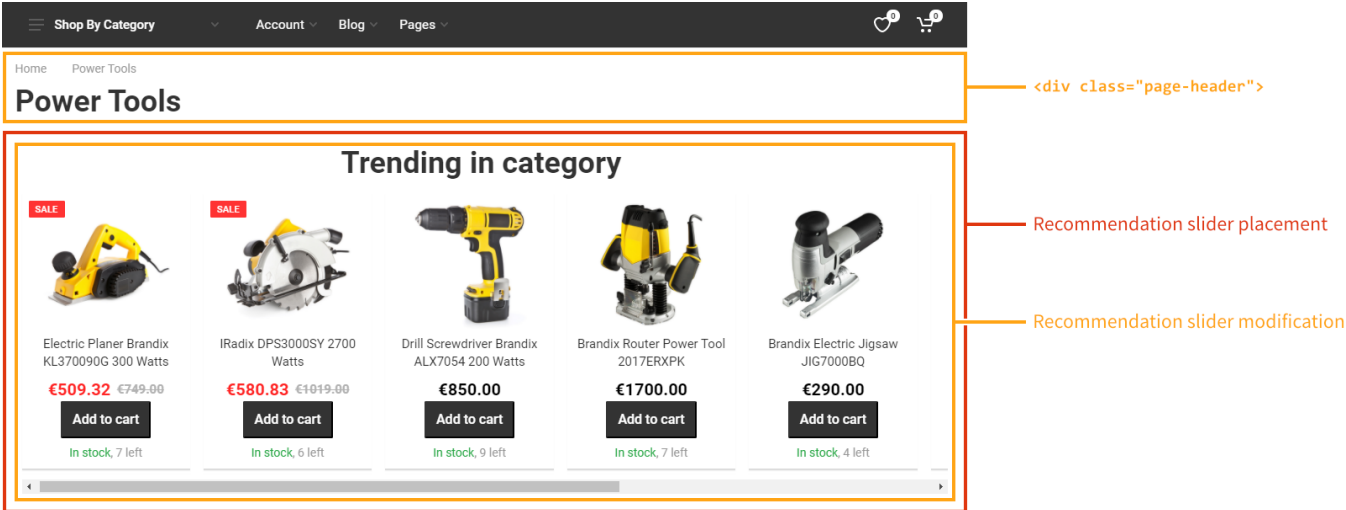



Figure: Recommendation slider below the page header on a product category page (click to enlarge)

 The URL scheme, content layout, and source code structure of a product category page on your site almost certainly differ from the above. You could also use a trigger instead of a URL matcher to identify category pages, and you might want to place the recommendation slider differently.

To display the recommendation:

1. [Create the recommendation slider placement.](#)

2. [Create the recommendation slider modification.](#)

Creating the recommendation slider placement

To create the recommendation slider placement:

1. In the Control Panel, select **Modifications > Placements**.
2. Click **Create placement**.
3. Define the following settings:
 - **Name:** Enter "Category page - Recommendation".
 - **Target element:** Select **CSS selector**, and enter "div.page-header" as the selector name.
 - **Display method:** Select **After element**.
 - **URL matcher:** Click **Add new rule**. Since only product page URLs contain `/category/` in their path, define the following rule: **Page path contains /category/**. This means that the placement is valid for a page only when the page URL path contains "/category/".

The target element, display method, and URL matcher together place the modification below the page header on every product category page.

Name*
Category page - Recommendation

Description

Target element*
Enter the selector for the web page element or elements in relation to which the modification content is to be placed in the page code. [Learn more](#)

CSS selector ▼ div.page-header

Display method*
Select how the modification content is placed in relation to the target element in the page code. [Learn more](#)

After element ▼

URL matcher
To use the modification content only on selected pages of the site, define one or more URL rules for the placement. [Learn more](#)

Page path ▼ contains ▼ /category/ X

Add new rule

For more information about the settings, see [Creating and editing a placement](#).

4. Click **Save**.

You have created the placement. You can now use the placement in a modification.

Creating the recommendation slider modification

To create and activate the recommendation slider modification:

1. In the Control Panel, select **Modifications > Overview**.
2. Click **Create modification**.

3. Enter "Category page - Recommendation - Trending in category" as the modification name, select **Personalization** as the modification case, and click **Create**.

Name*

Category page - Recommendation - Trending in category

Case*

The case determines the number of variations the modification can have, and how the distribution between the variations is defined. You cannot change the case without duplicating the modification. [Learn more](#)

A/B test
Test two or more content variations for the same modification.

Multi-armed bandit
Test multiple content variations for the same modification, and dynamically select the best-performing variation.

Personalization
Create a single piece of content that you can personalize.

Description

Enter a description for the modification. For an A/B test modification, this should be a hypothesis that defines the problem, proposed solution, and expected result for the test.

You could also select another case, but since this modification needs only the one variation, **Personalization** is the natural choice here.

For more information about the settings, see [Creating and editing a modification](#).

4. Select the placement for the modification:

- a. In the **Basic settings** view, in the **Placement** section, click **Select placement**.

Placement*

You must select a placement for the modification. [Learn more](#)

- b. Select the placement you created for the recommendation slider.

c. Click **Save**.

For more information about the settings, see [Defining the placement for a modification](#).

5. Define the content for the modification:

a. In the **Basic settings** view, in the **Content** section, click the variation name.

b. In the **Variation settings** section, click **Select type**.

c. In the **Content templates** list, select the template you created for the recommendation slider, and click **Select**.

d. In the **Content options** section, define the content options. You must define **Recommendation title**, **Recommendation strategy**, and **Number of products to recommend**. Enter an appropriate title, select the strategy you created for trending products, and set the number of products to 10. Feel free to try out other values for the number of products.

Content options

Recommendation title*

Recommendation strategy*

Number of products to recommend*

- e. At the bottom of the view, click **Save**.
- f. Back in the **Content** section, click the quick menu button for the variation, and select **Activate**.

Content*

Variation 1 - Template: Product recommendation slider

Inactive ⋮

Comparison group

Active 10% ⋮

- g. If you want to disable the [comparison group](#) for the modification, click the quick menu button for the group, and select **Deactivate**.

For more information about the settings, see [Defining the content for a modification](#).

- 6. Activate the modification:
 - a. At the bottom of the **Basic settings** view, click **Activate**.
 - b. To confirm, click **Activate**.

You have created and activated the modification. The recommendation is now live, and you're done with this example!